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This document, which comprises an AIM Admission Document, has been drawn up in accordance with the AIM Rules and has been issued in connection with the application for admission to trading of the entire issued and to be issued share capital of the Company on AIM. This document does not constitute a prospectus and a copy of it has not been, and will not be, delivered to the Registrar of Companies in England and Wales. This document contains no offer to the public within the meaning of Schedule 11 of the Financial Services and Markets Act 2000, EU Directive 2003/71/EC or otherwise.

**Application has been made for the ordinary shares of 1p each in the capital of Oxonica plc, issued and to be issued pursuant to the Placing, to be admitted to AIM. AIM is a market designed primarily for emerging or smaller companies, to which a higher investment risk tends to be attached than to larger or more established companies. AIM securities are not admitted to the Official List. A prospective investor should be aware of the risks of investing in such companies and should make the decision to invest only after careful consideration and consultation with an independent financial adviser. The rules of AIM are less demanding than those of the Official List. Neither the London Stock Exchange plc nor the United Kingdom Listing Authority have examined or approved the contents of this document.**

The Directors, whose names appear on page 3 of this document, accept responsibility for the information contained in this document. To the best of the knowledge and belief of the Directors (who have taken all reasonable care to ensure that such is the case) the information contained in this document is in accordance with the facts and makes no omission likely to affect the import of such information.

The Placing Shares have not been, and will not be, registered under the United States Securities Act of 1933, as amended, or under the securities legislation of any state of the United States. The relevant clearances have not been, and will not be, obtained from the Securities Commission of any province or territory of Canada, no document in relation to the Placing has been, or will be, lodged with, or registered by, The Australian Securities and Investments Commission, and no registration statement has been, or will be, filed with the Japanese Ministry of Finance in relation to the Placing or the Ordinary Shares. Accordingly, subject to certain exceptions, the Ordinary Shares may not, directly or indirectly, be offered or sold within the United States, Canada, Australia or Japan or offered or sold to a person within the United States or a resident of Canada, Australia or Japan.

**Prospective investors should be aware of the risks of investing in such companies and should make the decision to invest only after careful consideration and, if appropriate, consultation with an independent financial adviser. Prospective investors should carefully consider the section entitled "Risk factors" in Part II of this document.** All statements regarding the Group's business, financial position and prospects should be viewed in the light of the risk factors set out in Part II of this document.

## Oxonica plc

*(incorporated and registered in England and Wales under number 5363273)*

### Placing

**of 8,658,796 ordinary shares of 1p each at 95.8p per share**

**and application for admission to trading on AIM**

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#### SHARE CAPITAL IMMEDIATELY FOLLOWING ADMISSION

<i>Authorised</i>			<i>Issued and fully paid</i>	
<i>Number</i>	<i>Amount</i>		<i>Number</i>	<i>Amount</i>
500,000,000	£5,000,000	ordinary shares of 1p each	36,805,329	£368,053.29

**Panmure Gordon (UK) Limited ("Panmure Gordon & Co"), which is regulated in the United Kingdom by The Financial Services Authority, is acting exclusively for Oxonica plc as nominated adviser in relation to Admission. Panmure Gordon & Co is not acting for, and will not be responsible to, any person other than Oxonica plc for providing the protections afforded to customers of Panmure Gordon & Co or for advising any other person on the contents of this document or any transaction or arrangement referred to herein.**

Panmure Gordon & Co has been appointed nominated adviser and nominated broker to the Company. Under the rules of AIM, the nominated adviser has certain responsibilities to the London Stock Exchange which are less onerous than the responsibilities of a sponsor of a company applying for its securities to be admitted to the Official List. In accordance with the rules of AIM, Panmure Gordon & Co has confirmed to the London Stock Exchange that it has satisfied itself that the directors of the Company have received independent advice and guidance as to the nature of their responsibilities and obligations under the rules of AIM and that, to the best of its information and belief, all relevant requirements of the rules of AIM (save for compliance with the general duty of disclosure contained in regulation 9 of the Public Offers of Securities Regulations 1995, in respect of which the nominated adviser is not required to satisfy itself) have been complied with. In giving its confirmation to the London Stock Exchange, Panmure Gordon & Co has not made its own enquiries except as to matters which have come to its attention on which it considers it necessary to satisfy itself. Panmure Gordon & Co has not authorised the contents of, or any part of, this document and no liability whatsoever is accepted by Panmure Gordon & Co for the accuracy of any information or opinions contained in this document or for the omission of any material information, for which the Company and its directors are solely responsible.

Other than in accordance with the Company's obligations under the AIM Rules or otherwise required by law, the Company undertakes no obligation to update or revise publicly any forward-looking statement, whether as a result of new information, future events or otherwise. All subsequent written and oral forward-looking statements attributable to the Company, its directors or to persons acting on its behalf are expressly qualified in their entirety by the cautionary statements referred to above and contained elsewhere in this document. The information on the Company's website does not form a part of this document.

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## DIRECTORS, SECRETARY AND ADVISERS

<b>Directors:</b>	Christopher Mark Moore ( <i>Executive Chairman</i> ) Dr Kevin Roger Kenneth Matthews ( <i>Chief Executive</i> ) Richard John George Clarke ( <i>Finance Director</i> ) Charles John Eld ( <i>Non-executive Director</i> ) Robert Martin Pettigrew ( <i>Non-executive Director</i> ) Edward Weeks ( <i>Non-executive Director</i> )
<b>Company secretary:</b>	Richard John George Clarke
<b>Registered office:</b>	Unit 7 Begbroke Science Park Sandy Lane Kidlington Oxfordshire OX5 1PF
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## KEY INFORMATION

**The following information is extracted from, and should be read in conjunction with, the full text of this document. Prospective investors should read the whole of this document, including the risk factors set out in Part II, and not rely on the following summarised information**

### Summary

- Nanotechnology is widely seen as having potential to bring benefits to many areas of product application, in areas as diverse as drug development, energy and environment, information and communication technologies, and the production of stronger, lighter materials.
- The Directors believe that the Oxonica Group is one of the leading European nanomaterial groups.
- The Group's mission statement is to develop innovative commercial solutions for international markets using the Group's expertise in the design and application of nanomaterials.
- The Group's business model is to focus on its strength in identifying market opportunities, securing intellectual property and introducing new technology to market.
- The Group's operational strategy is to:
  - introduce products to large end-user markets to establish the customer value proposition and create customer demand;
  - form partnerships with major international brand owners to maximise market reach; and
  - outsource manufacturing.
- The Directors believe that by securing partnerships with both channel to market and manufacturing capacities the Group should grow profitably.
- Since formation in 1998, the Group has raised £12.5 million. The last funding round was completed in January 2005 for £2.6 million, from existing shareholders and employees, and valued the Group (post the last fundraising) at £22.6 million.
- The Group's technology competencies originate from an Oxford University spin-out in 1999.
- The Group has a patent portfolio of 29 families and 10 granted patents. To supplement in-house patents, the Group has a strategy of in-licensing certain technologies and building IP positions around the in-licensed technology.
- The Oxonica Group has three operating divisions:
  - Oxonica Energy;
  - Oxonica Healthcare; and
  - Oxonica Materials.
- The Group's commercialised products, which help conserve energy and can improve health through reducing the harmful effects of vehicle emissions and UV rays respectively, are:
  - Fuel borne nanocatalyst – a diesel fuel borne catalyst for diesel engines which reduces fuel consumption and emissions and helps conserve energy, marketed under the trade name “Envirox™”; and
  - UV protection additive – a photostable UV absorber which provides enhanced and longer-lasting protection against UVA in sun-care and anti-ageing products, has improved anti-ageing properties and which stabilises cosmetic formulations, marketed under the trade name of “Optisol™”.
- In these two areas, the Group has achieved some significant milestones towards creating revenue generating and profitable businesses.

## Commercialised products

Envirox™ fuel borne nanocatalyst

- Agreement in 2004 to adopt Envirox™ by Stagecoach Group plc for the whole of its UK and New Zealand bus fleets, after extensive trialling.
- In March 2005, the commercial launch in the Philippines of a premium diesel containing Envirox™ sold through retail forecourts by a consortium of independent petroleum companies.
- Conclusion of a non-binding letter of intent with BASF Aktiengesellschaft regarding the joint marketing of Envirox™ technology in April 2004. BASF has indicated that on the satisfactory completion of an EPA registration it will resume negotiations regarding the distribution of Envirox™ in defined territories and market segments to the oil industry.
- Oxonica Energy is in collaboration discussions with other major groups including national and international oil companies. It is also working with distributors on customer trials in Australia, Singapore and India. Individual customer trials of Envirox™ are also continuing in UK, Hong Kong and the Netherlands.

Optisol™ UV protection additive

- First commercial orders from Boots. Boots has incorporated Optisol™ in certain of its 2005 Soltan sunscreen products launched in April 2005 in UK Boots stores.
- The first commercial order for Optisol™ from a South Korean cosmetics formulator.
- The signing of a distribution agreement with Mitsui for Japan, China and Taiwan.
- Further discussions following initial evaluation of Optisol™ by more than 40 leading cosmetics groups worldwide.

## Development stage products

- The Oxonica Group is working to generate a range of future product applications including additional fuel additives, marker technology for the clinical and life science diagnostics markets, further UV protection applications including tailoring the Optisol™ product in the cosmetics markets and new products for plastics and coatings, transparent conducting films and security markers.

## Summary financial information

The following summary financial information has been extracted without material adjustment from the accountants' report on Oxonica Materials and its subsidiaries as set out in Part V of this document.

	<i>Year Ended 31 December 2002 £'000</i>	<i>Year Ended 31 December 2003 £'000</i>	<i>Year Ended 31 December 2004 £'000</i>
<b>Turnover</b>	118	210	391
<b>Cost of sales</b>	(8)	(116)	(108)
<b>Gross profit</b>	110	94	282
<b>Operating loss</b>	(2,102)	(2,633)	(3,208)

## Current trading and prospects for the Group

Unaudited group revenues for the five months ended 31 May 2005 were £680,000. The Group continues with the roll-out of Envirox™ into Stagecoach's UK and New Zealand bus fleets, and has commenced sales of Envirox™ in March 2005 into the premium diesel market in the Philippines. Following successful commercial evaluation, Optisol™ was formally launched in two Boots Soltan products in April 2005. The Group also raised £2.6 million in January 2005, from existing shareholders and employees. Since 31 December 2004, the Group has continued to trade in line with the Directors' expectations and the Directors are encouraged by the prospects going forward.

**Details of the Placing**

By way of the Placing, the Company is raising additional capital of £7.1 million, net of expenses, which will be used to finance the Group's continued growth.

## **PLACING STATISTICS**

Placing Price per Ordinary Share	95.8 pence
Number of existing Ordinary Shares prior to Admission	25,104,244
Number of Ordinary Shares in issue following the Placing	36,805,329
Market capitalisation at the Placing Price	£35.3 million
Number of Ordinary Shares being placed by the Company	8,658,796
Percentage of enlarged issued share capital subject to the Placing	23.5 per cent.
Net proceeds of the Placing to be received by the Company	£7.1 million

## **EXPECTED TIMETABLE**

Admission and commencement of dealings in Ordinary Shares on AIM	20 July 2005
Despatch of definitive share certificates in respect of the Placing Shares	by 27 July 2005

## PART I

### Information on the Group

The financial information contained in this Part I has been extracted without material adjustment from Part V of this document. Prospective investors should read the whole of this document and not rely solely on the information contained in this Part I.

#### 1. Introduction

The Directors believe that the Oxonica Group is one of the leading European nanomaterials groups and aims to develop innovative commercial solutions for international markets using its expertise in the design and application of nanomaterials. The Group is focused on identifying market needs and developing product applications, for the energy (including environmental), healthcare and materials sectors.

The Group has already developed, and is commercialising, two products for the following markets:

- Energy: Envirox™,
  - diesel fuel borne catalyst for diesel engines which reduces fuel consumption and emissions and helps conserve energy; and
  - initial customers are Stagecoach (UK and New Zealand) and DMX Technology Corporation (Philippines).
- Healthcare: Optisol™,
  - photostable UV absorber which provides enhanced and longer-lasting protection against UVA in sun-care and anti-ageing products;
  - improved anti-ageing properties and stabilises cosmetic formulations; and
  - initial customers are Boots (UK) and Hanjoo (South Korea).

In addition, the Group has a development pipeline of further product application opportunities, the most significant of which are in:

- Healthcare: biomarker technology, with the potential to enable highly sensitive simultaneous detection of disease indicators designed to improve the speed and accuracy of diagnostics and personalisation of medical treatments; and
- Materials: UV additives, with the potential to provide enhanced protection from UV light damage in a number of industrial applications including coatings and plastics.

In addition to its initial customers, the Group is working with a number of multinational transport and mining groups, oil companies, chemical companies and cosmetics formulators for Envirox™ and Optisol™. The Group is also in discussions to license its UV absorber technology for a range of industrial applications. The Directors believe that the Group's commercialised and development products have the potential for significant adoption by international markets. The Directors intend to position Oxonica as one of the major companies in the developing nanotechnology industry and Admission will provide funds for the Group to invest in sales and marketing activities, accelerate new product development and will enhance the Group's profile and incentivise employees.

#### 2. Nanotechnology

Nanotechnology is widely seen as having potential to bring benefits to many areas of product application, in areas as diverse as drug development, energy and environment, information and communication technologies, and the production of stronger, lighter materials. Global investment in nanotechnology in 2004 was estimated to have been \$8.4 billion. The most dramatic change is the rapid increase in corporate investment which in 2004 was estimated at \$3.4 billion with companies such as GE, IBM, DuPont de Nemours & Co and 3M, highlighting

developments in nanotechnology and in nanomaterials as significant to their future business. BASF AG estimates that its annual sales of nanotechnology based products currently account for €2 billion of its total \$42 billion turnover. The number of nanotechnology based products is growing rapidly. Commercialised products include self-cleaning windows, anti-stain and odour-proof clothing, tennis racquets, sunscreens, fuel additives and bandages for burns.

By way of background, a nanometre (nm) is one billionth of a metre. For comparison, a human hair is about 80,000 nm wide. Nanotechnologies have been used by industries for a number of years in sectors such as semiconductors and chemicals. However, development over the last 20 years in the tools used to characterise materials have led to an increased understanding of the behaviour and properties of very small size scales.

The resultant convergence of the traditional scientific disciplines of physics, chemistry, engineering, and biology opens up a great many opportunities to transfer technology across boundaries and create novel products. Materials behave differently at the nanoscale because they exhibit novel optical, magnetic and electrical properties, and a substantial increase in surface area which enhances chemical activity. Nanomaterials have been identified by industry analysts as one of the areas of nanotechnology that is most likely to lead to products in the short to medium term.

The UK Government has pledged significant support for nanotechnology in the UK. To encourage the development of this new industry it commissioned The Royal Academy of Engineering and The Royal Society to evaluate the potential benefits, risks and societal impacts of nanotechnology. The subsequent report, titled "Nanoscience and nanotechnologies: opportunities and uncertainties", published in July 2004, supported the positive potential of the technology and highlighted some areas where additional research was required and where regulatory review was recommended.

### **3. History and background of the Oxonica Group**

Oxonica plc is a public limited company incorporated in England and Wales on 14 February 2005 as a vehicle to bring the Oxonica Group to AIM. Oxonica acquired the entire issued share capital of Oxonica Materials Limited on 16 June 2005 in return for the issue of Ordinary Shares to the then shareholders of Oxonica Materials. The Group has three business divisions: Oxonica Energy, Oxonica Healthcare and Oxonica Materials.

Nanox Limited (now called Oxonica Materials Limited) was founded in 1998 by ISIS Innovation Limited, the University of Oxford's technology transfer company. The two academic founders were Professor Peter Dobson and Dr Gareth Wakefield. Professor Dobson is internationally recognised in the field of nanotechnology and is the Academic Director of the Begbroke Science Park, which includes the University of Oxford's Institute of Advanced Materials and he advises the Oxonica Group in connection with the development of nanoparticles under a consultancy agreement. Dr Wakefield began work on novel nanomaterial systems at the University of Oxford in 1994 which led to the development of some of the Group's core intellectual property and since then has published extensively in the area of nanotechnology. Dr Wakefield leads the Group's research activities. The Oxonica Group maintains a close relationship with the University of Oxford, which provides access to specialised equipment, highly qualified technical personnel and potential customers and partners.

The Group has secured a total of £12.5 million in funding to date including the founding investments and 'angel' rounds. The first institutional fundraising of £4.2 million was completed in June 2002 from a range of investors including BASF Venture Capital, Foresight VCT and Trivest VCT, by way of equity and loan notes. Two further funding rounds from existing shareholders have occurred, raising £4.0 million in January 2004 and £2.6 million in January 2005, which included £100,000 from employees and valued the Group (post the last fundraising) at £22.6 million. The main use of proceeds has been on product and market development for Envirox™ and Optisol™, development for the Group's biomarker technology and the recruitment of key personnel. The Group currently has thirty seven employees, of whom two are based in Hong Kong and one in Singapore.

#### 4. Business model

The Group’s mission statement is to develop innovative commercial solutions for international markets using the Group’s expertise in the design and application of nanomaterials. The business model Oxonica has adopted focuses on the Group’s strength in identifying market opportunities, securing intellectual property and introducing new technology to the market. The Group’s operational strategy is to introduce products to large end user markets to establish the customer value proposition, create customer demand and outsource manufacturing. The Group then seeks to form partnerships with international brand owners to maximise market reach. The Directors believe that securing partnerships with both channel to market and manufacturing capacity should generate profitable growth.

Given the diversity of the areas to which the Group’s technologies can be applied, and the emergent nature of the nanomaterials industry, the Directors believe that this business model should facilitate the development of a series of profitable international businesses in the medium term.

#### 5. Technology and pipeline

The Oxonica Group’s activities in nanotechnology are specifically in the area of nanomaterials. These are manufactured to be nanoscale and have novel properties. The Group has expertise in solid state physics, chemistry, and biochemistry. Using its multi-disciplinary approach, the Group is able to design inorganic mineral based materials that deliver specific functional benefits, often combining them with organic or biochemical systems. One of the key challenges in the manufacture of nanomaterials is keeping them ‘nano’, stopping them from forming larger particles in the product application. This often requires the development of specific coating technology.

The key generic advantages of the Group’s products are:

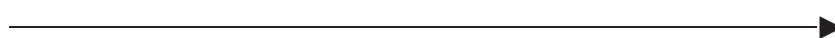
- stability and robustness to both heat and light; and
- functionality that is either novel or significantly enhanced.

In relation to Envirox™, combining the heat stability of an inorganic material (cerium oxide) with the significantly enhanced surface area characteristic of small particles, has led to a product that improves the combustion of fuel.

In relation to Optisol™, combining the UV light stability of inorganic materials (titanium dioxide or zinc oxide) with an ability to convert UV radiation into heat, has led to a product technology with significant performance advantages in UV protection. The application areas that could be envisaged for the UV technology include cosmetics, coatings, plastic films and plastics.

The Oxonica Group has a broad technology base that allows it to develop a number of product applications. Commercialisation is driven by the market-focused business divisions. Each division has a pipeline of opportunities as set out in the table below:

	<b>Commercial</b>	<b>Development</b>	<b>Research</b>
<b>Energy</b>	Envirox™	2nd Gen Envirox™	New Catalysts – fuel
<b>Healthcare</b>	Optisol™	Optisol™ Z Optisol™ Coated	Biodiagnostics
<b>Materials</b>		UV Films UV Coatings UV Polymers	Industrial Markers UV Ag Chem UK Inks/Textiles Conductive Films

Time 

The majority of the Group’s resources are currently being invested in the commercial products Envirox™ and Optisol™. The Group seeks to reduce risk on early stage projects through joint collaborations or grants. The biomarker technology research is benefiting from a DTI exceptional SMART award of £450,000 over two years. In addition, research into conductive

films has been carried out in collaboration with Johnson Matthey plc. The Oxonica Group selects and manages its project pipeline through a programme management committee that attempts to match resources to risk and reward potentials. This committee is chaired by Professor Michael Clark and is supported by Professor Peter Dobson who report their findings to Oxonica's CEO. Professor Clark is an internationally recognised scientist who has worked at board levels in Unilever and GEC Marconi. The key strength of this process is that it allows the Group to develop early cash generative products such as Envirox™ and Optisol™, whilst simultaneously developing new technologies.

## **6. Markets**

### **6.1 Oxonica Energy**

#### *Envirox™ fuel borne nanocatalyst*

Envirox™ is a fuel borne nanocatalyst yielding significant improvements in diesel fuel combustion with resulting benefits in fuel consumption and emissions reduction. No engine modifications are required to use Envirox™ and optimum dose rates are low.

Fleet trials to date have demonstrated fuel savings of between 5-10 per cent. In addition, separate studies have shown a reduction of particulate emissions of up to 15 per cent. Envirox™ also contributes to the reduction of the greenhouse gas, CO<sub>2</sub>. For every tonne of fuel saved, about 3 tonnes less CO<sub>2</sub> is produced and released into the atmosphere. Envirox™ is marketed based on the economic advantages of saving fuel and in addition brings benefits to the environment.

Following a successful 12 month trial, Stagecoach agreed in November 2004 to adopt Envirox™ for use across its entire UK and New Zealand fleet of 8,200 buses. The trial conducted with Stagecoach involved 1,500 buses in two regions of the UK, North West and London, and twelve depots and 15 bus/engine combinations. The headline results from the trial indicated a fuel saving of greater than 5 per cent. which was independently validated by an independent operational audit company. Potential conversion of the fleet operated by the US arm of Stagecoach is dependent on Oxonica Energy securing US Environmental Protection Agency (EPA) registration for Envirox™, for which it filed its application in April 2005.

Envirox™ is supplied to Stagecoach depots and Stagecoach uses metering equipment, designed for Oxonica Energy, to add Envirox™ to fuel as the depot tanks are replenished. A supply agreement for the provision of Envirox™ has been entered into with Stagecoach.

In April 2004, Oxonica Energy and BASF concluded a non-binding letter of intent regarding the joint marketing of Envirox™ technology. The letter of intent covered a due diligence process which addressed performance validation, health and safety and regulatory requirements. BASF has always maintained throughout the letter of intent process a condition that approval of the US Environmental Protection Agency (EPA) is a pre-requisite to the commercial adoption by BASF. BASF has indicated that on the satisfactory completion of an EPA registration they will resume negotiations with Oxonica Energy regarding the distribution of Envirox™ in defined territories and market segments to the oil industry.

Oxonica Energy has concluded trials in the Philippines which have led to the introduction of Envirox™ in March 2005 in a premium branded diesel fuel on the retail forecourt, by a consortium of independent petroleum companies representing around 20 per cent. of the Philippines market. In March 2005, Oxonica Energy signed a distribution agreement with DMX Technology Corporation for the Philippines market.

Additionally, Oxonica Energy is in collaboration discussions with other major groups including national and international oil companies. Oxonica Energy is also currently working with distributors on customer trials in Australia, Singapore and India. Individual customer trials are also continuing in UK, Hong Kong and the Netherlands. These trials typically take 6 to 18 months to complete.

### *Product technology*

The Envirox™ fuel-borne catalyst technology is based on dispersed nanoparticulate cerium oxide. This nanoparticle is then coated with a combination of fatty acids. It is the combination of the particle size and coating that provides a stable dispersion in a hydrocarbon solvent that can be readily dispersed in fuel. Envirox™ is sold at a concentration of 2 per cent or 5 per cent. 1 litre of 2 per cent. will treat 4,000 litres of diesel fuel. Oxonica Energy offers dosing technology to deliver Envirox™ into bulk fuel tanks at a concentration of 5 parts per million of cerium oxide.

Oxonica Energy is also investigating second generation Envirox™ technology with research targeted at enhancing product performance and broadening the application potential.

### *Intellectual property*

Oxonica Energy has in-licensed a core patent underpinning the fuel catalyst technology from Neuftec Limited and further developed a method to improve its dispersion and settling properties in diesel fuel. The Neuftec license is exclusive and runs until this patent expires (on 29 June 2021) or is revoked or the license is terminated according to its terms (further details in respect of termination are set out in Part II). The license is based on a combination of royalty and milestone payments and profit share.

Oxonica Energy has also filed additional patent submissions for product applications based around the original Neuftec license.

### *Manufacture*

Oxonica Energy currently sources its base cerium oxide product from ANO based in Perth, Australia and listed on the Australian Stock Exchange. The product is supplied under the terms of a project collaboration agreement dated 5 March 2003. Currently, Oxonica Energy carries out a final stage finishing process on ANO's base product at its facilities in Oxford. Oxonica Energy is working with ANO to outsource this finishing process to ANO's manufacturing site in Australia. The Group is also investigating a number of other potential suppliers to increase its product supply options.

### *Regulatory*

Oxonica Energy commissioned independent experts to provide advice on the regulatory requirements for Europe and Asia. Where necessary Oxonica Energy is securing registrations with the relevant regulatory authorities. The product is registered and / or conforms with regulations in Europe, New Zealand, Australia, Philippines, Singapore and Hong Kong.

The Oxonica Group's approach to the safety and risk assessment of all its products is based on a duty of responsible care throughout the product lifecycle. A summary of independent studies relevant to cerium added to diesel fuel was published by the Health Effects Institute in August 2001 and concluded that, based on the data available, cerium oxide had low toxicity.

The Oxonica Group has conducted additional tests beyond those required by the current applicable regulations to establish the safety of Envirox™. Results of these tests have led the Directors to conclude that there is no inherent difference in toxicity between nanoparticulate cerium oxide and standard non-nanoparticulate cerium oxide.

BASF has developed a process for evaluating the economic and environmental impact of a product over its lifecycle. Oxonica Energy contracted BASF to carry out an eco-efficiency profile which found that diesel containing Envirox™ is much more eco-efficient than unadditised diesel.

Oxonica Energy also commissioned a leading university to model air and soil impacts of Envirox™ long-term contamination. The results of this study concluded that over a 20 year period, Envirox™, when compared to conventional diesel, would lead to a reduction in atmospheric particulates and over a 40 year period incremental soil contamination would be two orders of magnitude lower than current background concentration levels in soil.

In order to sell Envirox™ into the US for on-highway use a US EPA registration is required. Oxonica Energy made its submission regarding Envirox™ to the EPA in April 2005 following completion of the EPA standard test requirement. It is anticipated that EPA will respond to the submission within 12 months. The EPA may require further testing prior to approval.

### *Market potential*

Oxonica Energy has developed a two tier approach to the marketing of Envirox™. Firstly, it has worked with end user customers such as Stagecoach in recognition that these companies can benefit directly from the fuel saving and help Oxonica Energy build credible performance data and customer demand. To address more effectively the volume market, Oxonica Energy has also been in discussions with a number of fuel additive and oil companies. This strategy has been successful in the Philippines where Oxonica Energy has worked with a group of independent oil companies to introduce Envirox™ into a premium diesel sold at the forecourt.

Frost and Sullivan estimates the current European diesel fuel additives market at \$260 million per annum mainly consisting of surfactants and lubricity improvers. An alternative analysis is to consider the use of diesel fuel used in the transport and off-road market, all of which could potentially be a market for Envirox™. This approach results in estimates of the size of the addressable market for Envirox™ at approximately \$3 billion, with the end uses summarised as follows:

	<i>\$'million</i>
Trucks	1,811
Off-Road	771
Cars	219
Locomotive	99
Buses	99
Light Marine	41

Diesel engines and diesel fuels are one of the major causes of urban air pollution, due to the emission of high levels of particulate matter, but they do have advantages in terms of fuel economy and CO<sub>2</sub> emissions. Oxonica Energy is initially focussing on heavy duty diesel vehicles. Oxonica Energy promotes Envirox™ primarily on fuel economy and not on reduced emissions which means it can access vehicles and fuels already in use, a large and immediate market. CO<sub>2</sub> reductions have implications for carbon trading.

Other potential market opportunities include mining, marine engines, stationary power generation and trains.

## **6.2 Oxonica Healthcare**

The Oxonica Group's second platform is in healthcare and includes cosmetics applications. Oxonica Healthcare has two application areas; a UV protection additive, Optisol™ which provides enhanced and longer-lasting protection against UVA, has improved anti-ageing properties and stabilises cosmetic formulations; and the development of biomarker technology, with the potential to enable highly sensitive simultaneous detection of disease indicators designed to improve the speed and accuracy of diagnostics and personalisation of medical treatments.

### **(a) Optisol™**

Oxonica Healthcare launched Optisol™ a photostable UV absorber to the cosmetics market in April 2004 with the initial targets being the sun-care and anti-ageing markets. UV absorbers are active ingredients in sunscreen products. In in-house tests, when compared with a wide range of commercial sunscreens, a formulation containing Optisol™ achieved the recognised Boots 5 Star (ultra) rating for eight hours. Most other products registered a 2 star rating or less within the same period. Optisol™ is comprised of titanium dioxide that has been doped with manganese. It has also been proven to reduce the production of free radicals, produced from exposure to the sun, and which contribute to long-term skin damage and premature ageing. Consumer trials have shown that Optisol™ is perceived to visibly improve the skin's appearance by minimising fine lines and wrinkles while hiding blemishes and creating a healthy radiant tone. Optisol™ is effective in stabilising other high cost, photosensitive components in a cosmetic formulation such as Vitamin C and E and Kinetin.

Oxonica Healthcare is marketing Optisol™ to branded cosmetic companies and cosmetic formulators. Discussions are continuing following initial evaluation by over 40 leading cosmetic groups. The first product sale was made in October 2004 through Oxonica Healthcare's South

Korean distributor (Hanjoo) to a South Korean cosmetics formulator. Another key milestone was the decision by Boots in November 2004 to formulate Optisol™ initially into a facial product for the 2005 season as part of the Soltan sunscreen range. Product sales to Boots commenced in February 2005 and the formulated product is now for sale on the shelves in Boots stores. Initial feedback from Boots has been positive. The sunscreen market is seasonal and as a result it is forecast that further sales of Optisol™ will not occur until late 2005 and it is expected that significant adoption will commence from 2006.

Oxonica Healthcare's strategy is to access the end consumer market by working directly with a number of major branded cosmetic companies and to access other markets through territory defined distribution arrangements. Consumer marketing is based on established brands and it is therefore important that Oxonica Healthcare is successful with brands and category leaders to establish Optisol™ as a key technology. Oxonica Healthcare has concluded an exclusive distribution agreement for Japan, Taiwan and China with Mitsui. The South Korean market is serviced through Oxonica Healthcare's exclusive distributor Hanjoo. Discussions are ongoing with potential distributors including for France, Spain and Australia.

#### *Product technology*

UV absorbers have been developed over many years to provide effective UVB protection thereby preventing sunburn, and is measured by SPF. More recently it has been recognized by industry observers that UV absorbers that are more effective in protecting against UVA, need to be developed. The skin is at risk of photo-oxidative damage by active oxygen species or 'free radicals' generated as a product of UVA absorption, which have been implicated as a cause of acceleration of the skin ageing process, and other damaging processes. UVA absorbers have been developed, however, these materials do not give stable, high levels of protection from UVA. Oxonica Healthcare developed Optisol™, a titanium dioxide UVA absorber modified by doping with a small amount of manganese. Optisol™ substantially reduces the formation of free radicals and stabilises other components within existing formulations extending the performance lifetimes of formulated and branded products. The Directors believe Optisol™ offers a new product concept to sun protection, anti-ageing cosmetics and cosmetics containing sensitive components.

#### *Intellectual property*

Oxonica Healthcare has in-licensed the core Optisol™ technology from the University of Oxford based on work initiated in the University of Oxford's Departments of Engineering Science and Biochemistry. The Oxonica Group has submitted a further nine patent applications of its own.

#### *Manufacture*

Umicore, a Belgian listed multi-national, manufactures Optisol™ for Oxonica Healthcare. This is an exclusive relationship limited to cosmetics.

#### *Regulatory*

Under cosmetics regulations in the European Union, ingredients (including those in the form of nanoparticles) can be used for most purposes without prior approval, provided they are not on the list of banned or restricted use chemicals and that manufacturers declare the final product to be safe. A favourable opinion has been given for the nanoparticulate form of titanium dioxide including coating and doped variance but insufficient information has been provided to allow an assessment of zinc oxide, which is also used in sunscreen formulations. Optisol™ is approved for use in the US by the FDA and registered in Australia on the Australian register of therapeutic goods.

Oxonica Healthcare has conducted additional tests beyond those required by current applicable regulations. Results from these tests lead the Directors to conclude that there is no inherent difference in toxicity between nanoparticulate Optisol™ and standard grades of titanium dioxide.

#### *Market potential*

Optisol's™ potentially addressable markets include sun-care, anti-ageing cosmetics, cosmetics that include sun protection and cosmetics that include UV sensitive components.

All these markets are within the skincare category, which is the largest sector within the international cosmetics and toiletries market, with an annual market value of \$50 billion and an anticipated growth rate of 7 per cent. per annum. The producers of sunscreen products and anti-ageing cosmetics include many leading cosmetics and personal care companies such as L'Oreal, Beiersdorf, Johnson & Johnson, Schering Plough and Estee Lauder.

The major growth trends within the skincare market are:

- continuing strong growth in the overall sun care market being driven by public concern about the effects of exposure to sunlight;
- increasing use of anti-ageing products;
- increasing incorporation of UV absorbing ingredients into everyday products (cosmetics, moisturisers, etc); and
- increasing use of products containing sensitive components such as vitamins and natural products.

The total materials market for UV absorbers was estimated to be between \$250 million and \$350 million in 2004. Organic absorbers account for 75 per cent. of consumption. Inorganic absorbers, almost exclusively ultrafine zinc oxide and titanium oxide, account for the remainder. The international market for inorganic absorbers in sunscreens is therefore currently approximately \$75 million.

Optisol™ has the potential, as a result of its functional benefits, to be a direct replacement to standard mineral based UV absorbers which account for 25 per cent. of the UV absorber market. The ability of Optisol™ to penetrate the remaining 75 per cent. of the UV absorber market will depend on UV performance in combination with enhanced stabilisation benefits. In addition, Optisol™ has a substantial market opportunity in the general skincare market as an anti-ageing additive and as a result of its ability to stabilise other components.

#### **(b) *Biodiagnostics***

The Oxonica Group is developing a new imaging system that has the potential to improve test sensitivity and the ability to test multiple disease markers to support diagnosis of disease. The Group has in-licensed, from Strathclyde University, a technology based on Surface Enhanced Resonant Raman Spectroscopy (SERRS), which is a core component of this new imaging system. This licensed technology has demonstrated sensitivity improvements using SERRS of 1,000 fold relative to conventional fluorescence systems and an ability to prepare four different markers with a potential significantly in excess of this. The technology is currently being developed into a prototype with comparative testing against current detection systems. The markers are visualised using currently available commercial equipment and tailored software. There are a number of potential end markets for this technology including clinical diagnostics and life sciences. To access the clinical diagnostics market, with a potentially addressable market of \$7.2 billion with the predominantly life science-based high-density multiplexed assays having a market of approximately \$840 million, is likely to require extensive research & development over a number of years before commercialised products are available. The Group will seek to secure partnership deals with major diagnostic companies to support the funding and development of product applications in this market.

The Group was successful in securing a £450,000 DTI exceptional SMART award over two years starting in January 2004. The award contributes towards the costs of demonstrating the marker technology.

#### *Market Potential*

A key fundamental driver for change in the diagnostics industry is the need to reduce treatment costs and improve medical outcomes. There is a growing recognition by the health services, the pharmaceutical and the diagnostics industries of the potential to improve health care by a closer integration of treatment and diagnostics. Diagnostics have the potential to impact throughout the medical process with developments in

- genetic profiling used to identify a latent risk;

- improvements in conventional diagnostics (eg subtype of disease, stage of development of disease etc.);
- personalised medicine, with a better match between a drug and a patient, reducing adverse drug reaction which currently costs the US healthcare industry \$130 billion per annum; and
- accurate monitoring of treatment and progress (theranostics).

The establishment of a new generation of diagnostic testing technology which would allow faster, more precise and lower cost diagnostic testing is a key technical requirement to facilitate the required industry changes.

The Directors believe that the SERRS technology will position the Group to participate in the development of a new generation diagnostics industry that is forecast to become integrated into ever more aspects of medical treatment. The diagnostics market is extremely complex with a large number of technology companies competing to provide the next breakthrough technology and partner with major diagnostic companies.

As with the Oxonica Group's other products, it is the Board's current intention to target its commercialisation strategy towards securing partnership deals with major diagnostics companies. However, to achieve this the Board recognizes that the performance benefits of robust sensitivity and multiplex capability will have to be demonstrated in an application, whether it is clinical assay or high throughput screening. Therefore, the Group's initial technical targets are focused on demonstrating a working assay system in a niche application.

### **6.3 Oxonica Materials**

#### *UV protection for plastics and coatings*

Oxonica Materials consists of a number of early stage development platforms:

- UV absorbers for polymers and coatings;
- transparent conducting oxides for conductive films; and
- marker technology for security applications.

Oxonica Materials aims to strengthen this part of the portfolio with investment in business and application development.

Initial data has demonstrated that Oxonica Materials' UV protection technology based on manganese doped titanium dioxide or manganese doped zinc oxide can provide benefits in stabilizing plastics and coatings from UV induced damage.

Polymers, plastics and coatings are degraded by UV which affect appearance, mechanical properties and physical-chemical properties. To protect polymer systems from degradation a number of additive compounds are added. The UV absorber market for polymers and coatings is predominantly based on organic materials known as light stabilizers, anti-oxidants and PVC stabilizers. The global market is estimated to be worth annually \$2 billion. Major players in the market include Ciba, Great Lakes, Albermarle, BASF, Clariant and GE.

These markets are complex with different multi-additive component packages being used for different polymers and different polymer grades into different applications. Oxonica Materials' strategy includes licensing its technology to companies who have application expertise in the various sectors.

#### *Security markers*

Losses from counterfeit goods are estimated to exceed £400 billion per annum. The SERRS marker technology being developed for the biomarker programme may have the potential to lead to a commercial application in security markers. Oxonica Materials is in early stage discussions with a major international group to consider developing a product for its anti-counterfeiting requirements.

### *Transparent conducting oxide films*

Transparent conducting oxides are transparent films used to carry electricity and have applications in solar cells, window coatings and displays. Oxonica Materials, in partnership with Johnson Matthey plc, has developed potential replacement technology and is evaluating potential further technology extensions and whether the developed technology will translate into a competitive product offering.

## **7. Competition and related products**

### (a) *Envirox™ fuel borne nanocatalyst*

The main competitors to Oxonica Energy in the diesel fuel additive sector are:

- *Major multinational fuel additive companies* e.g. BASF, Octel, Lubrizol, and Infineum: These companies have powerful market presence and strong supply chain logistics. Oxonica Energy has a proprietary product and there is the potential that one or more fuel additive companies may become partners for Oxonica Energy's Envirox™ technology.
- *Clean Diesel Technologies, Inc. (CDT)*: CDT is an AIM quoted company that sells a fuel borne catalyst, Platinum Plus. CDT claims both fuel economy and emissions benefits. CDT has sold EPA approved products in the US market and has a strong emphasis on reduced emissions.

The Directors believe that Envirox™, which does not contain platinum, is able to effectively compete with Platinum Plus on a cost benefit basis.

- *Other fuel additive technology*: there are a number of small companies with fuel additive technology which make a variety of claims with respect to fuel economy and emissions. The Directors believe that Oxonica Energy's demonstrated and proprietary Envirox™ technology is differentiated from these other fuel additive technologies.
- *Alternate fuels*. The alternative fuels markets such as LPG and CNG remain relatively small compared to the diesel market.

Related products include Eolys which is a product sold by Rhodia SA as a fuel additive exclusively targeted at modern, low emission diesel vehicles with on board dosing systems for synergistic benefit with diesel particulate traps. Rhodia SA has a partnership with PSA.

### (b) *Photostable UV protection for skincare*

The Optisol™ UV absorbers are targeted at an established but growing market with an existing market structure. The two established competitive technologies work to absorb UV, but do not stabilize other components in the formulation. Therefore, the Directors believe Optisol™ has a clearly differentiated position offering both UV protection and stabilization of other components in the cosmetic formulation. In in-house tests, when compared with a wide range of commercial sunscreens, a formulation containing Optisol™ was the only sunscreen that could achieve the recognised Boots 5 Star (ultra) rating for eight hours. Most products tested registering a 2 star rating or less within the same period.

### (c) *Biomarker technology*

The Directors believe that the Group's SERRS based technology has the potential to offer significant advantages over conventional marker systems. The Directors are aware that a number of early stage companies are developing innovative markers.

Further details on the Group's competition are contained in the technical experts' report by PA Strategy Partners Limited set out in Part III of this document and in the "Risk Factors" in Part II of this document.

## **8. Intellectual property**

The Oxonica Group currently maintains a portfolio of 29 patent families. These include seven patent families which include the Optisol™ technology which was licensed exclusively to the Group by Isis Innovation Ltd, Oxford University's IP exploitation and technology transfer company.

Oxonica Energy in-licenses one patent family from Neuftec Ltd for the Envirox™ fuel-borne catalyst, has access to four patent families covering biodiagnostic applications in-licensed from University of Strathclyde and has one application developed as part of the joint project with Johnson Matthey plc filed in Oxonica Energy's name.

Ten patents have been granted to a member of the Group, with further applications in 29 families filed and pending. The patents cover all the areas of the Group's activity, summarised in the following table. Further details are contained in the Patent Agents report by J A Kemp & Co set out in Part IV of this document:

<i>Field</i>	<i>Number of patents granted</i>	<i>Number of patent families</i>
Fuel additives	1	4
Optisol	3	7
Biodiagnostics	2	9
Polymers & coatings	0	3
New product development	4	6
Total	<u>10</u>	<u>29</u>

From 2004, the Group has employed an experienced IP manager to manage its patent portfolio on a day-to-day basis. The portfolio is reviewed regularly by an internal Intellectual Property Strategy Committee (IPSC). The aim of the IPSC is to manage internal IP and maintain and develop knowledge of external IP thereby securing an IP position that can be exploited as part of the Group's commercial strategy.

The Group conducts searches for patents at grant or application stage to identify any potential third party infringements. Where appropriate Oxonica obtains infringement opinions from its retained patent attorneys. These are summarised in the Patent Agents reports by J A Kemp & Co and Kilburn & Strode set out in Part IV of this document.

The Group has filed trademark applications in various jurisdictions for Oxonica, Envirox, Optisol, Serrplex, Serrcode, Cerulean and the Cerulean logo.

## **9. Board of Directors, senior management and employees**

### **9.1 Board of Directors**

The Directors are:

#### **Christopher Moore, MA, FCA (age 60) Executive Chairman (part-time)**

- Christopher Moore was appointed part-time Executive Chairman of Oxonica Materials in 2004.
- He obtained a law degree from Cambridge University and qualified as a Chartered Accountant with Price Waterhouse.
- He started his career with Robert Fleming Inc in New York, then moved to Lazard Brothers in London, prior to rejoining the Robert Fleming Group.
- He has experience in corporate finance, capital markets, project finance, and unquoted investment sectors; and was a main board director of the Robert Fleming Group for nine years.
- He established a strategic advisory and private equity business in 1995, including acting as senior adviser to the chairman of Lloyds of London for five years.
- He has worked with a range of US and UK quoted and unquoted groups and private equity proposals, including chairing the turnaround of a fully listed industrial group (Calderburn plc).
- His private equity experience includes: chairman of Fleming Ventures Ltd., an international technology venture fund, from 1992-2003 (47 per cent. annual IRR); director of TriVen VCT Plc, TriVest VCT Plc, Matrix Income & Growth VCT Plc, three listed venture funds.

### **Kevin Matthews, MA, DPhil, CChem, CSi, MRSC, MACS (age 41) Chief Executive Officer**

- Kevin Matthews was appointed Chief Executive Officer of Oxonica Materials in 2001.
- He was appointed non-executive director of Elementis plc in 2005.
- He studied chemistry at Oxford University and continued research at the University of Bristol.
- He started his career at ICI, before joining Albright & Wilson, where he headed up an R&D team before moving into a series of senior commercial and strategic development roles.
- Following Albright & Wilson's acquisition by Rhodia SA in 1999, he was appointed as global business director managing a \$100 million international chemical technology business with significant R&D expenditure and a focus on developing new businesses.

### **Richard Clarke, BSc, FCA, MBA (age 50) Chief Financial Officer**

- Richard Clarke was appointed Chief Financial Officer of Oxonica Materials in June 2004.
- Richard graduated in economics from University College, London and qualified as a Chartered Accountant with Ernst & Whinney in 1980.
- He was finance director of a number of engineering and electronics manufacturing subsidiaries of the Dowty Group, both in the UK and overseas, from 1986 to 1994.
- From 1995 to 2001 he was finance director of the Avimo Group, a high-tech electro-optics manufacturing group listed on the Singapore Stock Exchange.
- Following the purchase of the Avimo Group by Thales of France, Richard joined IQE plc as Chief Financial Officer, achieving a successful public share issue.
- He left IQE in 2002 and joined Mayflower Aerospace Limited in Bristol, a substantial venture capital backed aerostructures business, to implement a financial restructuring.

### **Charles Eld, BSc, CMBII (Age 53) Non-Executive Director and Chairman of the Remuneration Committee**

- Charles Eld has served on the Board of Oxonica Materials in a number of capacities since August 1999 and during this time he has held office as Company Secretary from August 1999 to January 2002 and was also chairman from February 2001 to September 2003. He is also chairman of the audit and remuneration committees.
- He is an executive director of Seighford Investment Company Ltd. ("Seighford"), which was one of the two original investors in Oxonica Materials.
- In 1982, after twelve years service in the Royal Artillery, he resigned his commission and joined Morrells Brewery Limited ("Morrells"), being appointed to the board in 1983 and took on the chief executive role in 1988.
- Following the sale of Morrells in 1998 he achieved a postgraduate diploma in legal studies from Staffordshire University.
- In 1999, he established Seighford as a family investment business.

### **Robert M Pettigrew, (age 60) Non-Executive Director**

- Bob Pettigrew co-founded the Generics Group in 1986, one of the leading international laboratory-based technology, business consulting and investment groups.
- Between 1991 and 2000 he was managing director and then executive chairman of Scientific Generics and was key member of the team that took the company public in 2000 with a market capitalisation of £250 million.
- He also was involved in developing the Generics Group investment activities in early stage technology ventures and was a director of Generics asset management.
- He retired from the Generics Group at the end of 2002 to pursue independent consulting and investment activities.
- He is chairman of Genesis Ltd and is also a member of the advisory boards of Antenova and the Synergy Fund as well as being a non executive board member of three venture capital trusts, listed on the Official List of the London Stock Exchange plc.

### **Ed Weeks, C Chem, MRSC, FIMMM (age 58) Non-Executive Director**

- Ed Weeks is a Fellow of the Institute of Materials, Minerals and Mining.
- He was appointed Director of Plastics at BASF UK in 1989 and joined the firm's Management Committee.
- In 1997, he became managing director of Targor Ltd, a joint venture between BASF and Hoechst.
- In 2000 on the formation of Basell NV, a joint venture between Shell and BASF, he was appointed head of corporate communications for Basell NV.
- He has held many board appointments amongst them Babcock Contractors Ltd and Elastogran UK Ltd.
- In 1995, he was elected President of the British Plastics Federation.
- He is currently chairman of the Polymer Industry Education and Training Trust.
- He is chairman of the risk committee of Oxonica.

## **9.2 Senior Management**

### **Stuart Anderson (age 54) Business Director, Oxonica Energy**

- Stuart Anderson joined Shell Research Ltd in 1969.
- In 1975 he transferred into the commercial area taking on a series of internationally oriented marketing and sales positions including two extended periods overseas in Egypt and Australia.
- In 1994 moved into Shell's Lubricant and Fuel Additives business and after completing a international business review project assumed the role of Marketing and Sales Manager Asia Pacific including India, Japan and Australia/New Zealand.
- In January 1999, transferred to Infineum, an additives joint venture between Shell and ExxonMobil, as Sales Director Europe, Middle East and Africa including responsibility for development of a newly formed sales team and the implementation of a centralised customer service and supply function.
- In 2000 assumed international responsibility for all aspects of the strategic Shell account before joining the Group in mid 2002.

### **David Browning, MSc, FIBMS, FCIM (age 42) Business Director, Oxonica Healthcare**

- David Browning is qualified in clinical biochemistry and biochemical immunology.
- David's career has encompassed roles from diagnostics research to customer sales and support and business management, gained with the UK National Health Service, Amersham plc, Ortho Clinical Diagnostics (Johnson & Johnson) and IGEN International, Inc.
- His principal focus has been on expediting the development and international commercialisation of advanced clinical diagnostics products within healthcare and related fields.
- He joined the Group in August 2003.

### **Andrew Elphick, BSc MCIM MBA (age 41) Business Director, Materials**

- Andrew Elphick graduated in biology and has post graduate qualifications in Marketing and Business Studies.
- Andrew has spent the majority of his career with ICI, holding senior positions in international sales, marketing, purchasing and business unit management. Andrew has also worked for Ernst & Young LLP as a director within its chemicals department.
- Andrew has had extensive experience of the chemicals sector, ranging from organic and inorganic commodities, through fluorinated specialities to polymers. He has gained significant expertise in managing business with multiple technologies and market platforms.

- He leads the development and exploitation of the Group's UV protection expertise in non-personal care applications, as well as driving forward the Group's strategy for transparent conductive films and nano-based solutions for the security market.
- He joined the Group in April 2005.

#### **Barry Park, BSc, PhD, C Chem, FRSC, FIMMM (age 56) Chief Operating Officer**

- Barry graduated in Applied Chemistry followed by a PhD in Polymerisation Kinetics and subsequently spent three years as a Postdoctoral Fellow in the Bioengineering Unit at the University of Strathclyde.
- In 1977, Barry joined the R&D division of Raychem and was responsible for development of curable adhesives, piezoelectric devices, battery separators and polymeric electrolytes.
- From 1989 through 1990, he was seconded to Raychem's Materials Division in the US prior to joining Raychem's Materials Division in the UK as Technical Manager where he remained until 1999.
- From 1999 to 2000, Barry operated as a consultant and conducted business and market studies for Applied Market Information Ltd and lectured at Warwick and Loughborough Universities.
- Barry joined Oxonica Materials in 2001.
- Barry is a co-author of 20 papers and is an inventor on over 30 patent applications leading to over 120 patents granted worldwide.

#### **Gareth Wakefield BSC PhD CPhys (age 36) VP Research**

- Gareth Wakefield is a graduate in physics and has a PhD on nanostructured catalysts from the University of Bristol.
- In 1994, Gareth moved to the Department of Materials Science at the University of Oxford to begin work on novel nanomaterial systems which led to the development of some of the Group's core intellectual property.
- He co-founded Oxonica Materials with Peter Dobson in 1999, since when he has headed up the research activities of the Group. He has contributed to 19 patent applications and 27 scientific publications during his career and has Chartered Physicist status from the Institute of Physics.

#### **Ronen Hazarika (age 32) Regional Director, Oxonica Singapore**

- Ronen Hazarika began his career in the motorsport industry, holding marketing positions with various teams participating in international motorsport, prior to setting up his own company which provided a one stop marketing service to the racing industry.
- He subsequently re-focused the company's activities into the area of oil, fuel & industrial additives, becoming the exclusive UK distributor for several major chemical manufacturers.
- In July 2000, Ronen joined Celox to help develop some of the company's early stage IP. This resulted in the filing of a PCT application for the use of nanoparticulate cerium oxide as a fuel borne catalyst. This technology was subsequently licensed to Oxonica Energy and Ronen decided to continue with the conceptualisation and initial market development for the product by joining the Oxonica Group in 2001.
- He relocated to Hong Kong in 2002 to establish Oxonica Energy's Asia Pacific activity, and subsequently relocated to Singapore in 2005 where he is now based. He is responsible for the commercialisation of Envirox™ in the Asia-Pacific region.

## Employees

As at 14 July 2005, the Group employed 37 people. The split of employees by area of activity and geography is as follows:

*Number of employees*

	<i>Energy</i>	<i>Healthcare</i>	<i>Materials</i>	<i>F&amp;A</i>	<i>Corporate</i>	<i>Total</i>
Sales and Marketing	5	2	1			8
Research	1	8	1			9
Tech Support	3					3
Operations	4					4
Support				7	5	13
Total	<u>13</u>	<u>10</u>	<u>2</u>	<u>7</u>	<u>5</u>	<u>37</u>

The Group has 34 employees in UK, 2 in Hong Kong and 1 in Singapore.

## 10. Summary financial information

The following summary of the financial information of the Oxonica Group for the three financial years ended 31 December 2004 has been extracted from the accountants' report on Oxonica Materials and its subsidiaries as set out in Part V of this document without material adjustment. Investors should read the whole of this document and should not rely solely on the key or summarised information set out below:

	<i>Year Ended 31 December 2002 £'000</i>	<i>Year Ended 31 December 2003 £'000</i>	<i>Year Ended 31 December 2004 £'000</i>
Turnover	118	210	391
Cost of sales	(8)	(116)	(108)
Gross profit	110	94	282
Operating loss	(2,102)	(2,633)	(3,208)

## 11. Current trading and prospects for the Group

Unaudited group revenues for the five months ended 31st May 2005 were £680,000. The Group continues with the roll-out of Envirox™ into Stagecoach's UK and New Zealand bus fleets, and has commenced sales of Envirox™ in March 2005 into the premium diesel market in the Philippines. Following successful commercial evaluation, Optisol™ was formally launched in two Boots Soltan products in April 2005. The Group also raised £2.6 million in January 2005, from existing shareholders and employees. Since 31 December 2004, the Group has continued to trade in line with the Director's expectations and the Directors are encouraged by the prospects going forward.

## 12. Reasons for Admission and use of proceeds

The Directors believe that the Placing and Admission will:

- raise new capital for the Group, which will enable it to continue the international commercial development of Envirox™ and Optisol™;
- add to group research capabilities;
- raise the profile of the Oxonica Group with its customers and suppliers internationally; and
- assist in the recruitment, retention and incentivisation of employees.

The proceeds of the Placing, net of the total anticipated costs and expenses of the Placing and Admission, receivable by the Company are approximately £7.1 million. The net proceeds will be applied principally to:

- finance the development and marketing of Envirox™ and Optisol™ worldwide, including establishing the necessary supporting operational, logistics, sales and marketing infrastructure;

- carry out any additional product testing required to conform with either product registration requirements or commercial requirements, including the US EPA;
- invest in the further commercialisation of Oxonica Materials' UV protection technology for the coatings and plastics market, and other potential applications;
- accelerate the development of the biomarker technology; and
- to fund working capital.

The Placing Shares represent approximately 23.5 per cent. of the enlarged issued share capital, and are being issued by the Company to raise approximately £7.1 million, net of expenses, for the purposes referred to above. The Placing Shares will be issued as fully paid and will, on issue, rank *pari passu* with the Ordinary Shares already in issue at Admission. Application has been made for the Placing Shares to be admitted to trading on AIM.

### **13. Qualifying investment for EIS and VCT purposes**

On the basis of information provided to HM Revenue & Customs, the Company has received confirmation that shares to be issued under the Placing will be eligible for EIS and VCT purposes.

Such advance assurance does not guarantee EIS qualification for an individual, whose claim for relief will be conditional on his own circumstances and is subject to holding the shares throughout the three-year relevant period. In addition, for VCT and EIS relief not to be withdrawn, the Company must comply with a number of conditions and no guarantee is given that the future activities of the Company will be such as to retain any qualifying company status for EIS or VCT purposes.

If you are in any doubt as to your tax position, you should consult your professional adviser immediately.

Further information regarding taxation in relation to the Placing and Admission is set out in paragraph 13 of Part VI of this document.

### **14. Dividend policy**

Oxonica is seeking to primarily achieve capital growth for its shareholders. As a recently formed holding company of a group which has incurred significant research and development expenditure, Oxonica does not have any distributable reserves. Accordingly, the Company is currently unable to declare a dividend. It is the Board's intention during the current phase of the Group's development to retain any future distributable profits for use within the business. Thereafter, subject to the availability of distributable reserves, the Directors intend to pursue a dividend policy reflecting the Company's growth in earnings and cash flow generated from operations, while maintaining an appropriate level of dividend cover and having regard to further development of the Group's activities. The declaration and payment by the Company of any dividends will depend upon the results of the Group's operations, its financial condition, cash requirements, future prospects, profits available for distribution and other factors deemed to be relevant at the time.

### **15. Lock-in and orderly market arrangements**

Various lock-in and orderly market arrangements have been entered into as follows:

- (i) By way of separate lock-in agreements among Panmure Gordon & Co, the Company and each of the Locked-in Shareholders, each of the Locked-in Shareholders has undertaken to Panmure Gordon & Co and the Company, without the prior written consent of Panmure Gordon & Co (or such other broker as the Company may appoint), not to dispose of any interest in any of the Ordinary Shares held by them comprising, in aggregate, 60.89 per cent. of the Ordinary Shares following Admission and the Placing (which excludes any Ordinary Shares either (i) subscribed by them pursuant to the Placing or (ii) issued to them on capitalising the loans made by them to the Group, as referred to in paragraph 16 of this

paragraph 16 of this Part I of this document) for a period of 12 months following Admission, save in the event of certain specified circumstances which are in accordance with standard market practice in this type of agreement, including a take-over offer.

Thereafter for a further 12 months the Locked-in Shareholders have also agreed that any disposals by them of such Ordinary Shares will be made subject to Panmure Gordon & Co's reasonable representations with a view to maintaining an orderly market. Any such disposals are to be through Panmure Gordon & Co or such other person as may be the broker of the Company from time to time.

- (ii) Those Directors who will hold Ordinary Shares at the time of Admission, together with certain senior managers, Stuart Anderson, Dr Barry Park and David Browning, (together being the "Locked-in Managers"), have entered into separate lock-in agreements with Panmure Gordon & Co and the Company, pursuant to which undertakings on the same terms as those being given by the Locked-in Shareholders have been given to Panmure Gordon & Co and the Company, save that the Locked-in Managers are not permitted to dispose of any of interests in the Ordinary Shares held by them at Admission before the date which is for a period of 18 months from Admission, or, if later, before the publication of the preliminary results for the year ending 31 December 2006, save in the event of the same specified circumstances. These arrangements have been made in respect of 196,043 Ordinary Shares representing 0.53 per cent. of the issued share capital of the Company following Admission.
- (iii) All other employees of the Group who are currently shareholders in the Company have entered into separate lock-in agreements with Panmure Gordon and the Company pursuant to which undertakings on the same terms as those being given by the Locked-in Shareholders have been given to Panmure Gordon & Co and the Company save that such employees are not permitted to dispose of any of the interests in the Ordinary Shares held by them at Admission (which excludes any Ordinary Shares subscribed by them pursuant to the Placing) for a period of 18 months from Admission, save in the event of the same specified circumstances. These arrangements have been made in respect of 100,072 Ordinary Shares representing 0.27 per cent. of the issued share capital of the Company following Admission.
- (iv) Also, the Placing Shareholders by way of separate orderly market agreements entered into with Panmure Gordon & Co and the Company have agreed not to dispose of any interests in the Placing Shares and any Ordinary Shares issued to them on capitalising the loans made by any of them to the Group as referred to in paragraph 16 of this Part I of this document for a period of 12 months following Admission in order to maintain an orderly market without the prior written consent of Panmure Gordon & Co, save in the event of the same specified circumstance referred to above. These arrangements have been made in respect of 10,520,608 Ordinary Shares representing 28.58 per cent. of the issued share capital of the Company following Admission.

## **16. Shareholder loans**

A number of Shareholders made loans to the Group under the terms of an investment agreement dated 7 June 2002 in aggregate equal to £2,199,932. Subject to the terms of such loans, the loans are repayable upon Admission. The holders of loans with a value of £1,964,518 are converting their loans into Ordinary Shares at the Placing Price conditional on Admission.

## **17. Share option schemes**

The Company operates a share option scheme consisting of The EMI Pre-Admission Scheme together with The Unapproved Pre-Admission Scheme. In addition the Company has, conditional upon Admission, established a Post-Admission Scheme on similar lines, again comprising an enterprise management incentive share option scheme and an unapproved share option scheme. Details of these schemes are set out in Part VI of this document.

## **18. Corporate governance**

The Directors are committed to maintaining high standard of corporate governance and the Directors intend, so far as practicable given the Group's size and the constitution of the Board, to comply with the Combined Code.

The Directors have established an audit committee and a remuneration committee, each of which will comprise the non-executive directors of the Company. The audit committee and the remuneration committee will be chaired by Charles Eld.

The audit committee will receive and review reports from the Company auditors relating to the annual and interim accounts and the accounting and internal controls systems in use throughout the Group. The audit committee will be responsible for ensuring that the financial performance of the Group is properly reported on and monitored.

The remuneration committee will review the scale and structure of the executive directors remuneration. The remuneration and terms and conditions of appointment of the non-executive directors will be set by the Board as constituted from time to time.

The remuneration committee will also administer any share option schemes and will be responsible for advising on and monitoring any performance related criteria.

Given the size of the Board and the Group, the Directors presently envisage having at least two independent non-executive Directors.

## **19. Admission, settlement and CREST**

Application has been made to the London Stock Exchange for the entire issued and to be issued share capital of the Company to be admitted to trading on AIM. It is expected that Admission will be effective and that dealings in the Ordinary Shares will commence on 20 July 2005.

The Articles permit the Company to issue shares in uncertificated form in accordance with the Uncertificated Securities Regulations 2001. CREST is a paperless share transfer and settlement system which allow shares and other securities, including depositary receipts, to be held in electronic rather than paper form. Application will be made by the Company's Registrars for the issued and to be issued Ordinary Shares to be admitted to CREST on Admission. Accordingly, following such application becoming effective, settlement of transactions in the Ordinary Shares following Admission may take place within CREST.

## **20. Risk factors**

**The Group's business is dependent on many factors and potential investors are advised to read the whole of this document, and in particular Part II entitled "Risk factors".**

## **21. Further information**

The attention of prospective investors is drawn to the information contained in Parts III, IV, V and VI of this document which provide additional information on the Group.

## **PART II**

### **Risk factors**

**Prospective investors should be aware that an investment in the Company involves a higher than normal degree of risk. Accordingly, prospective investors should consider carefully the specific risk factors set out below in addition to the other information contained in this document. In addition to the other information contained in this document, the Directors consider the following risk factors to be the most significant for potential investors in the Company and should be considered carefully in evaluating whether to make an investment in the Company and, in particular, should be read in conjunction with the Technical Expert's Report in Part III of this document and the Patent Agents' Reports in Part IV of this document. The risks listed do not comprise all those associated with an investment in the Company and are not set out in any particular order of priority.**

**The Group's business, financial condition or operations could be materially and adversely affected by the occurrence of any of the risks described below. In such case, the market price of the Ordinary Shares could decline due to any of these risks and investors could lose all or part of their investment. Additional risks and uncertainties not presently known to the Directors, or that the Directors currently deem immaterial, may also have an adverse affect on the Group and the information set out below does not purport to be an exhaustive summary of the risks affecting the Group.**

**An investment in the Ordinary Shares described in this document is speculative. Potential investors are accordingly advised to consult a person authorised for the purposes of FSMA who specialises in advising on investments of this kind before making any investment decisions. A prospective investor should consider carefully whether an investment in the Company is suitable in the light of his, her or its personal circumstances and the financial resources available to him, her or it.**

**Your attention is also drawn to the risk factors identified by PA Strategy Partners Ltd in Part III, paragraphs 3.1.7, 3.2.7, 4.1.5 and 4.2.5.**

#### **Limited operating history**

The Group is at an early stage of development and the revenues generated to date consist of initial sales to a limited number of customers with the most significant being Stagecoach Group Plc, DMX Technology Corporation, Hanjoo C&C Co. Ltd. and Boots Group plc, together with products supplied to potential customers for the purposes of trial and evaluation. The Group has incurred substantial cumulative losses as a result of its investment in its commercialised technology. The commencement of the generation of significant sales revenues is difficult to predict and while the majority of the customer trials are progressing well, there is no guarantee that these trials will lead to significant revenues in the foreseeable future. Oxonica's ability to achieve profitability is dependent on a number of factors, including the ability to achieve sufficient sales revenues and to obtain satisfactory prices for its products. The Group expects to incur operating losses for the foreseeable future. The Group has a limited trading history upon which its future performance and prospects can be evaluated.

The Group faces risks frequently encountered by developing companies. In particular, the Group's future growth and prospects will depend on its ability to manage growth and to continue to expand and improve operational, financial and management information and quality control systems on a timely basis, whilst at the same time maintaining effective cost controls. Any failure to expand and improve operational, financial and management information and quality control systems in line with the Group's growth could have a material adverse effect on the Group's business, financial condition and results of operations. If the Group does not generate sufficient revenue levels to achieve and sustain profitability, it may require additional financing, which may or may not become available. The Group's growth and profitability may be reliant in the future on its ability to access capital for further development. Additional equity fundraising on the capital markets may be

dilutive for existing shareholders, and debt-based financing, if available, may bind the Group to restrictive covenants and curb its operating business. Inability to access funding may result in a curtailment of the scale or scope of the Group's business.

### **Intellectual property**

The Group's commercial success will depend, in part, on its ability to obtain and maintain effective patent and other protection for the technologies underlying the materials and applications relating to the Group's products and to defend successfully patent rights in those technologies against third party challenges. Patent applications have been filed in a number of countries in respect of the Group's technologies and further information about these applications is set out in Part IV. There can be no assurance that any such applications will be granted or, if granted, be enforceable, and they may be amended to reduce the scope of protection of patent claims.

In addition, third parties may oppose the Group's patents and patent applications. If patents are granted they may later be held invalid or may fail to provide any competitive advantage. Further, there can be no assurance that competitors of the Group will not independently develop similar technology, or otherwise gain access to the Group's technology, the result of which could be a material loss of value to the Group.

The Group may from time to time be notified of claims that it is infringing third party patents or other IP. Any resulting litigation could lead to a significant expense to the Group, adversely affect sales of the challenged product or technology and divert the efforts of its scientific and management personnel. The Group may also be required to pay substantial litigation costs, whether or not the litigation is determined in its favour, and/or to obtain (if possible) a licence to continue to use the relevant IP.

The Group relies on the confidentiality of its know-how to protect technology where patent protection is believed to be inappropriate or unobtainable. If confidentiality of this information is not or cannot be maintained or a member of the Group cannot demonstrate its rights to keep the information confidential, the Group's ability to preserve the value of such information will be at risk.

No assurance can be given that the Group will develop products which are patentable or that patents will be sufficiently broad in their scope to provide protection for the Group's intellectual property rights against third parties. Nor can there be any assurance as to the ownership, validity or scope of any patents which have been, or may in the future be, issued to the Group or that claims with respect thereto would not be asserted by other parties. Substantial costs may be incurred if the Group challenges the proprietary rights of others or is required to defend its proprietary rights.

The commercial success of the Group will also depend upon non-infringement of patents granted to third parties who may have filed applications or who have obtained or may obtain patents relating to products which might inhibit the Group's ability to develop and exploit its own products. If this is the case, the Group may have to obtain alternative technology or reach commercial terms on the exploitation of other parties' intellectual property rights. There can be no assurance that the Group will be able to obtain alternative technology or, if any licences are required, that the Group will be able to obtain any such licence on commercially favourable terms, if at all. This may have a material adverse effect on the Group.

### **In-licensed technology**

The Group also in-licenses certain technology and the right to use certain patents that are owned by third parties. The summary of in-licensed patents are set out in the Patent Agents Report in Part IV. Patent applications have been filed in a number of countries in respect of these in-licensed patents, and in certain circumstances, the patents have been granted. There can be no assurance that any such applications will be granted or, if granted, be enforceable, and they may be amended to reduce the scope of protection of patent claims. Also, there can be no guarantee that patents the Group in-licenses are not valid and not open to challenge. In addition, failure to develop products based on technology licensed by the Group could result in the unexploited licence being terminated.

## **Legal and contractual risks**

Members of the Group have entered into a number of significant contractual arrangements with third parties in connection with the Group's intellectual property and the supply, distribution and sale of its products. All agreements are subject to interpretation and some agreements are not binding. There is no guarantee that the Group will be able to enforce all its rights under its agreements or arrangements with third parties.

The Group's contracts with certain significant customers, including Stagecoach Group plc and Boots Group plc, may be terminated at short notice by such customers. While the Directors are not presently aware of any reason likely to lead to such termination, there can be no guarantee that such termination will not occur in the future. Such termination could have a material adverse effect upon the Group's revenues and earnings.

The Group is exposed to product liability risks that if not adequately covered by insurance may have a material adverse effect upon the Group's financial condition.

The Group has drawn down £174,000 of the SMART grant referred to paragraph 6.2 of Part I, leaving a balance of £276,000. The Company has written to the DTI to obtain confirmation that the SMART grant will not be prejudiced following Admission and a reply is awaited.

## **Product development**

The Group's development of nanomaterial technologies and products is ongoing and certain technologies, including biodiagnostics, UV protection for plastics and coatings and transparent conducting oxides, require further development and trials to prove their efficacy before they can be commercialised. This development effort may take longer than planned and may suffer significant setbacks, despite having previously achieved promising results. If the Group experiences significant delays in the development of its technologies or products, the Group's financial results and the commercial prospects for such technologies or products may be impaired.

## **Commercialisation**

A key aspect of the Group's strategy is to establish strategic or licensing partnerships for the commercialisation of its nanomaterial technologies. There is no assurance that the Group will be able to negotiate commercially acceptable licensing or other agreements for the future exploitation of its products or technologies.

The markets for the Group's development products are still immature and as such price elasticity points have not yet been established. If the Group is unable to match market expectation of price its total business may be constrained.

Commercialisation will be reliant upon recruiting adequately skilled individuals or contracting with distributors or partners to access markets, especially those overseas. Failure to secure a distribution channel will significantly impact the sales generated from that division.

In addition to commercial customers the Group is currently engaged in customer trials of its commercial products. There is no guarantee that these trials will be successful.

If the companies that distribute the Group's products or license technology do not effectively develop and market products the Group's revenues would be adversely affected.

## **Loss of key personnel**

The success of the Group and its business strategy are dependent on its ability to attract and retain key management, technical, sales, marketing and other personnel with the relevant expertise and experience. While the Directors consider that no single individual is critical to the Group's operations, the loss of one or more key employees could have a material adverse effect on the Group. Although members of the Group have entered into contracts with, and endeavoured to incentivise, key personnel, there can be no assurance that it will be able to retain and motivate its personnel.

As the Group continues to develop and commercialise its products, it will need to recruit and integrate additional personnel. There is intense competition for qualified personnel in the nanotechnology field and, in a period of high growth, the loss of the services of one or more key personnel or the inability to recruit and effectively integrate additional personnel in a timely manner may have an adverse effect on the Group's business.

### **Dependence on suppliers and partners**

The Group does not have its own volume manufacturing facilities and relies on a small number of third parties to manufacture its products. Both the diesel fuel additive and the UV protection additive are currently sole sourced and the Group is reliant on these suppliers for maintaining the quality and quantity of its production supply. There are alternative suppliers for the Group's products and it is the Group's intention to develop second source suppliers. Developing a new supplier or changing suppliers takes time to implement and requires the products to be evaluated and tested especially having regard to the nature of the Group's business. This process may have a disruptive effect on the Group's supply chain and an adverse impact on revenue and costs.

Material changes in nanotechnology manufacturing regulations may impact upon the ability of the Group to source material.

### **Competition**

The markets in which the Group operates are competitive and may become more competitive. Although the Group believes that it will compete favourably in these markets, there can be no assurance that the Group can maintain its competitive position against current and any potential competitors, especially those with greater financial resources.

### **Health & safety and regulatory standards**

The markets in which the Group operates are subject to numerous health and safety and other regulations. The Group's strategy has been formulated in the light of the current regulatory and legal environment and likely future changes. However, the science of nanomaterials is relatively new and the potential benefits and risks have been reviewed and reported on by the Royal Academy of Engineering and the Royal Society in a study commissioned by the UK government. Due to the early nature of this industry the regulatory and legal environment may change both rapidly and significantly in the near term. Any such changes to, and increases in, regulation or legal requirements may have a material adverse effect on the Group.

The Group's products are subject to a number of regulatory and registration requirements. Oxonica Energy's Envirox™ product has recently been submitted for registration with the US EPA. There is no guarantee that this application will be successful and it is likely to take at least 12 months before the result is known. If Oxonica Energy was not successful in registering its Envirox™ product with the US EPA, it would not be able to sell Envirox™ into the US on-road market.

### **Exchange rate fluctuations**

A substantial proportion of the Group's revenues is expected to be denominated in US dollars and a significant part of the cost of sales will be in Australian dollars or Euros. The Group is therefore exposed to foreign currency risk due to fluctuations in exchange rates. While the Group intends to manage its foreign currency exposures through the use of appropriate hedging instruments, the Group may remain exposed to gains or losses with respect to exchange rate movements which may be material. Such movements may also cause fluctuations in reported financial information that are not necessarily related to the Group's operating results.

### **Share price volatility and liquidity**

The share price of publicly traded emerging companies can be highly volatile. The price at which the Ordinary Shares will be quoted and the price which investors may realise for their Ordinary Shares will be influenced by a large number of factors, some specific to the Group and

its operations and some which may affect the quoted technology sector, or quoted companies generally. These factors could include the performance of the Group's research and development programmes, large purchases or sales of the shares, currency fluctuations, legislative changes in the nanotechnology environment and general economic conditions.

Admission to AIM should not be taken as implying that there will be a liquid market for the Ordinary Shares. It may be more difficult for an investor to realise his investment on AIM than to realise an investment in a company whose shares are quoted on the Official List.

Substantial future sales of Ordinary Shares could impact the market price of Ordinary Shares. There has been no prior public market in the Ordinary Shares before and an active trading market may not develop or be sustained in the future.

## PART III

### Technical expert's report

The following is the full text of a report on the Oxonica Group by PA Strategy Partners Ltd:



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14 July 2005

Dear Sirs,

#### 1. Introduction

PA Strategy Partners Ltd ("PA") is a wholly owned subsidiary of PA Consulting Group (of which PA Holdings is the parent company), a leading International Business and Technology Consulting Group headquartered in the UK and operating in Europe, North America and Asia Pacific. The PA Consulting Group has conducted many reviews of pharmaceutical, healthcare, engineering, media and fine chemicals companies, which involved assessing technology and advising companies of research and technology matters. PA has prepared Experts Reports to support the public offerings of a number of companies across a range of sectors including Corac plc, Powderject plc, Gyrus Medical plc, Toad plc, Turbo Genset Inc. PA Consulting Group employs specialists with knowledge in science, technology, product development, markets and business issues across a range of industries.

PA has been instructed by the Directors of Oxonica Materials Limited ("Oxonica Materials") (formerly Oxonica Limited), a wholly owned subsidiary of Oxonica plc to assess certain aspects of Oxonica Materials and Oxonica Energy Limited ("Oxonica Energy") (together "Oxonica" or "the Group") activities, specifically:

- To provide commentary upon and assessment of, the general validity of Oxonica's commercial strategy
- To provide commentary on, and assessment of the major products which have been developed so far, and their competitiveness with other products on the market
- Investigation and comment upon the key benefits and features of Oxonica's fuel additive (Envirox™) and UV absorption (Optisol™) technologies in comparison to competitive products using publicly available information
- To provide commentary on the potential markets for these products in Oxonica's defined markets
- To provide commentary including the merits and risks, on Oxonica's research and development activities in Bio-diagnostic markers.

In preparing this report we have conducted interviews with key staff and officers of the company, reviewed documentation prepared by Oxonica, such as technical reports, market analysis and financial plans, and assessed Oxonica's activities by reference to PA's internal knowledge base supplemented by discussion with independent authorities.

This report has been prepared with due care and diligence based upon information provided to PA by Oxonica and cited third parties at the time of preparation. PA has no reason to doubt the veracity of such information but has only verified it to the extent indicated above. Changes in circumstances may render such information and verification invalid at any time hereafter.

## **2. Introduction to Oxonica**

### **2.1 History**

In 1998, Isis Innovation, the commercialisation subsidiary of the University of Oxford, launched Nanox Ltd, and this company was renamed Oxonica Limited in 2001 (now named Oxonica Materials). Oxonica Materials was initially funded by private investors and completed its first round of institutional investment in June 2002, raising £4.2 million from a syndicate of investors. In January 2004, Oxonica Materials raised an additional £4 million in second round equity funding. An additional £2.6 million was raised in January 2005.

It was created to exploit intellectual property in the area of nanomaterials, and more specifically nanoparticles. Nanoparticles are materials with three dimensions on the nanometre scale, for example materials such as precipitates, colloids and quantum dots. At the nanometre scale, effects not observable at the bulk scale may become evident. These effects are driven by the increase in surface area for nanoparticles compared to the bulk, and in some cases by quantum phenomena. As particle dimensions are reduced, the surface area of the material increases, as does the fraction of atoms on the surface of the particle. As catalytic reactions occur at surfaces, the reactivity of nanoparticles often increases compared to an equivalent mass of bulk material.

The Group is based on the Begbroke Science Park, Oxford and currently has 37 employees.

### **2.2 Strategy and organisation**

#### **2.2.1 Technology Strategy**

Oxonica's core competences lie in nanoparticle product development, taking basic scientific ideas and applying knowledge of physical chemistry to produce specific functionality for applications in a diverse range of market sectors. Oxonica's model relies on a pipeline of intellectual property to be acquired/created, product development by in-house experts in nanomaterials and applications development, and outsourced manufacture or licensing.

Oxonica's technology strategy is based on exploitation of core competences in the areas of:

- Inorganic nanoparticles for catalysis and/or manipulation of Ultra Violet (UV) radiation
- Controlling the physical properties of nanoparticle dispersions for tailored catalysis and manipulation of optical radiation

The Group has a core team of technical specialists in inorganic chemistry and nanoparticle physics, dispersion control and supplements activities with applications development specialists for specific product developments. Historically it has recruited these capabilities from industry.

Research and development is the responsibility of the VP of Research, to whom the core research team of scientists and technologists report. Applications and product development is provided by additional technologists in the individual product areas. In each product area, the applications development staff report directly or indirectly to the Business Director responsible for that area. The business has a pipeline of new technologies with potential to develop into new product lines. PA believes that to ensure long-term growth, Oxonica will need to monitor and direct the activities of its core research team to ensure that technical support for products entering the market does not reduce the effort on new technology development.

### 2.2.2 Intellectual Property

Exploitation of Intellectual Property (IP) is a major element of Oxonica's business strategy, and protection of IP is key for the future of the business. As we are not patent attorneys, the IP position is reviewed elsewhere in the admission document. However, in relation to its development activity we note the following:

Oxonica has a diverse portfolio of IP, licensed from Universities (Oxford and Strathclyde), a third party company, and created in house by its own scientific staff.

Oxonica's patent portfolio has 29 patent families covering:

- Use of TiO<sub>2</sub> and ZnO with dopants in various formulations for application in UV protection
- Use of lanthanide oxides (primarily CeO<sub>2</sub>) with or without dopants for use as a fuel additive
- Use of rare earth phosphors and Surface Enhanced Resonant Raman Spectroscopy for bio-diagnostics
- Various other patents on rare earth phosphors for new product development

Oxonica has trademark protection for the names Oxonica, Envirox™, Optisol™, SERRcode, Cerulean and the Cerulean logo.

The Group intends to grow its IP portfolio through internal development work, license agreements and collaborations. The Group has a patent budget, which is expected to grow as a number of patents are expected to be granted in 2005/2006 which will require higher costs to maintain the portfolio. Oxonica uses an internal review group to assess its IP portfolio to protect both its business areas and development programmes. The Group has a full time IP manager who manages the portfolio on a day-to-day basis.

We note that the strategy for outsourced manufacture places some reliance on the intellectual property and know-how of manufacturing partners. PA recommends that the Group continues to actively manage its portfolio, and ensures that dependence on manufacturing IP from single source suppliers is monitored to ensure Oxonica continues to extract maximum value from the sales of its products.

### 2.2.3 Product Development Strategy

Oxonica's product development strategy is based on exploiting the functionality of nanomaterials to address unmet needs in a variety of markets from diesel fuels, sunscreens and cosmetics through to bio-diagnostics. Oxonica has two current products and additional development projects in its pipeline. Current products are:

- Envirox™ – a fuel borne catalyst to improve the fuel economy of diesel engines
- Optisol™ – a UV protection additive aimed at sun care and anti-ageing markets

The development pipeline currently has two projects:

- Bio-diagnostics – a technology for use in analysing and monitoring diseases, and in drug discovery
- UV absorbers – additives for UV protection of plastic materials and coatings

Further out are a number of technology development projects, including:

- Security markers – technology for security marking applications (currently a watching brief is being taken on this project)
- Transparent conducting coatings – an R&D programme examining a technology with a wide range of potential applications in electronics, sensing and engineering

Envirox™ and Optisol™ have both entered the market, demonstrating that Oxonica has experience in taking ideas from the science stage, through product development and to market. In the future development of the business, PA recommends that a more sophisticated portfolio management approach, or similar, is developed to select projects and ensure the appropriate balance of resources and investment is deployed in near market and long term developments.

Oxonica's 2005 budget indicates an ongoing expenditure on product development, including an increased effort in UV protection for plastics and polymers. This budget includes a DTI Smart Award for £450,000 over 2 years (2004/2005).

#### **2.2.4 Manufacturing Strategy**

Oxonica does not intend to become a manufacturer, but to develop products to the stage where outsourced manufacturers can be used. Oxonica has entered into agreements with Advanced Nanotechnology Limited (Australia) for Envirox™, and Umicore SA (Belgium) for Optisol™. For Envirox™, final processing is completed at Oxonica's facilities in Oxford, although Oxonica is working to outsource this to Advanced Nanotechnology Limited in the future.

Oxonica relies on the availability of nanoparticle processing facilities with the ability to tailor particle production to its specific needs and an ability to manufacture at the volumes required to meet predicted demand. Globally, there are a number of nanoparticle producers although not all will be able to meet Oxonica's specifications and volume requirements. Development of Quality Assurance/Quality Control procedures to monitor performance of manufacturers will become important as volumes grow and final stage processing is outsourced. This will need to be actively managed by Oxonica.

#### **2.2.5 Commercialisation Strategy**

The Group intends to develop products and applications in a diverse range of sectors, positioning itself as a product developer rather than manufacturer and using a network of specialist technical advisors where necessary. The Group develops strategic relationships to access manufacturing, marketing and sales channels.

In the short term, Oxonica generates revenue from low volume supply of product direct to end customers and to strategic partners. In the long term, once product benefits are clearly demonstrated, the Company intends to capture value from license agreements with its strategic partners, possibly in conjunction with material supply.

Key to building strategic relationships is the demonstration of product benefits to both the strategic partner and the end user. Oxonica's strategy has been to conduct collaborative trials to build confidence in the products before entering into agreements with partners. Resources in business development and technical support are key requirements for implementing this strategy. PA notes that discussions with potential strategic partners are ongoing in the fuels, UV absorber and bio-diagnostics areas.

#### **2.2.6 Marketing**

Oxonica has developed a number of products that will primarily be retailed by partners in a diverse range of markets. Oxonica management has a business development and marketing capability, and key to market penetration is the formation of strategic partnerships with organisations who are recognised as market leaders and which have end customer access.

PA concurs that in the early stages of the roll out of Oxonica's products, direct marketing and test programmes / trials with individual customers will be required to build confidence in the products and to demonstrate their benefits. In the long term PA believes that partnership with global or regional players will be essential in each of the current and planned product lines if the business is to grow significantly. Access to the marketing and sales functions of larger partners will enable Oxonica to grow without the necessity to grow large internal competences in each of its product areas.

PA believes that in the short term, Oxonica will need to carefully balance its marketing business development resources between the need for direct marketing and conducting trials, and the need to enter into strategic agreements with major players. PA believes that Oxonica management is aware of, and managing, this balance.

### **3. Oxonica's Products**

Oxonica has a portfolio of technologies and products at various states of maturity. Business development activities are focused on the two most mature products, Envirox™ and Optisol™. The R&D area of greatest focus is bio-diagnostics with activities in UV stabilizing polymer additives representing an evolutionary development of its Optisol™ technology.

### **3.1 Envirox™**

Envirox™ is a fuel borne catalyst, consisting of cerium dioxide nanoparticles, for use as an additive in diesel combustion engines. Oxonica has developed the Envirox™ product, undertaken a number of customer trials, and is in the process of rolling out Envirox™ to a bus fleet customer in the UK and regional fuel suppliers in the Philippines.

#### **3.1.1 Product Merits**

The additive has two main functions:

- Improving fuel efficiency through catalytically enhancing the combustion process
- Reducing emissions via a more complete burn

There may also be a beneficial effect from removing deposits from engine components. Envirox™ consists of nanoparticles of cerium dioxide (ceria), a catalytic material already used in diesel emissions management systems. The nanoparticles have a mean particle size of 10-20nm in diameter and testing shows the Envirox™ product alters the diesel combustion process, increasing combustion duration and increasing the energy released per unit of fuel. The ceria is formulated together with surfactants, and solvent carrier, to enable handling and dispensing currently into bulk diesel storage bunkers. The Envirox™ contains ceria at a concentration of 2 per cent., diluted in use to around 5 parts per million ("ppm") in diesel.

The current Envirox™ dispensing system design relies on an operator inputting accurate figures on the fuel volume to be added to the storage tank before calculating and dispensing the required volume of Envirox™. As the concentration of Envirox™ is critical for optimised performance, PA believes that calibration and ongoing monitoring of the ceria levels may be required. PA understands that Oxonica is testing options to convert to a mass flow rate based dispensing system that may reduce operator interface requirements.

The principal evidence for fuel economy benefits for Envirox™ has been generated through extended UK and Asian bus fleet trials. Static engine testing has also been carried out on a research engine at Oxford Brookes University. The tests at Oxford Brookes have indicated reduced fuel consumption (ca 10 per cent.) per unit of power due to Envirox™, as measured by brake specific fuel consumption. A reduction in unburnt hydrocarbon and particulate emissions was also measured. Other static engine tests at MIRA and Ricardo using standard diesel engines did not show significant improvements in fuel efficiency within the experimental error of the tests and under the test conditions used.

The testing of Oxford Brookes indicated that the combustion process was altered by Envirox™, this effect being dependent on Envirox™ concentration. PA notes that accurate control of Envirox™ concentration will be important in optimising fuel economy benefits, and we understand that Oxonica is working with dispensing equipment suppliers to ensure the need for tight dosing control can be achieved.

Oxford Brookes developed a hypothesis for mechanisms that lead to performance improvements. PA believes the Oxford Brookes hypothesis is reasonable based on our review of the supporting evidence.

PA believes the fundamental molecular mechanisms, which enable Envirox™ to enhance the combustion process, reduce emissions and produce engine clean up, are not yet fully characterised by Oxonica. Oxonica is working to develop its understanding of these fundamental mechanisms and is planning further tests as part of this process.

A trial was conducted with Citybus Company in Hong Kong using 80 buses (40 Cummins engines and 40 Volvo engines). The trial results were analysed by Wakelin Statistical Services, which indicated 'clear and highly statistically significant' fuel economy benefit in the Envirox™ group compared to the control group. For Cummins engines, the additised mean fuel economy was improved by 9.7 per cent. over the whole trial. Excluding test data from the Envirox™ induction period of 6 weeks, the fuel economy rose to 11.4 per cent. for Cummins engines. In the case of the Volvo engines the mean fuel economy benefit was 7.9 per cent. over the whole trial,

rising to 9.9 per cent. when data from the 6 week induction period was ignored. The trial data indicated a gradual improvement in fuel economy in the initial phase of the Envirox™ trial. As yet the mechanism for this gradual change in performance has not been fully explained. This may explain the lack of fuel economy improvement in the short term trials carried out at MIRA and Ricardo with standard engines.

Further trials have been conducted at two UK regions of Stagecoach Group plc, covering the North West of England and London. Trials included vehicles with and without diesel particulate filters. A statistical study by an independent operational audit company has been carried out which indicates fuel economy improvements of 5.7 per cent. in the North West and 5.5 per cent. in London over the whole trial period.

PA believes that this statistical analysis of the field trial data demonstrates a clear fuel economy benefit due to the addition of Envirox™. As result of the outcome of the trials, Stagecoach has begun a roll out of Envirox™ across its UK and New Zealand fleets.

### **3.1.2 Commercial potential**

Envirox™ does not fit into current diesel additive market segments (such as fuel stability, fuel handling, engine performance enhancers and contaminant control) so no historical market figures exist on which to base demand estimates.

In 2003, an independent consultant, on behalf of Oxonica, estimated global diesel consumption across a number of sectors including power generation and transportation. On the basis of these data, Oxonica has estimated the total potential market for Envirox™ to be £2.3 billion, assuming 100 per cent. market penetration and that a suitable formulation can be developed for all fuel types. PA has reviewed the basis of Oxonica's calculations, and believes that the approach based on segment volumes and Envirox™ price appears reasonable.

### **3.1.3 Commercial Strategy**

Oxonica has targeted the bus segment initially, the rationale being high diesel consumption, pressure for improved emissions control and the use of centralised fuel depots, which negates the need for on board dispensing systems. PA agrees that the initial market focus on bus fleet operators is appropriate as market entry is relatively straightforward and the financial benefits for the customer are relatively clear to demonstrate.

To avoid the requirement for on board dosing systems, and the associated development costs, Oxonica is initially targeting customers with their own fuel distribution system where Envirox™ can be added directly to bulk fuel stores. Given the resources available to Oxonica, and the current lack of an on board dosing system development, PA believes this strategy is appropriate. The Company is currently using a contract engineering company to install and commission the dispensing systems across Stagecoach sites.

2005 sales are primarily driven by the roll out across Stagecoach and capture of a significant number of new customers in the Asia Pacific region. Oxonica's interests in the Asia Pacific region originate from its involvement in the Asian Clean Air Initiative. The Clean Air Initiative for Asian Cities (CAI-Asia) promotes and demonstrates mechanisms to improve the air quality of Asian cities through partnerships and shared experiences.

The strategy for sales growth depends on successful conversion of new potential customers through individual field trials. PA believes that Oxonica will need to strengthen its business development and technical services capability to successfully conduct these trials and provide ongoing customer support if the sales targets are to be achieved. Some of the new customer conversions and entry into the North American market are likely to be contingent on successful EPA approval.

In the long term, Oxonica wishes to create strategic partnerships with large, established players in the diesel and fuel additives market. This model has been used in the Philippines with the roll-out of premium diesel into that market where independent Philippines based oil companies are already supplying the product on the forecourt. PA agrees that in the long term, it is a sound strategy to use the marketing and commercial strengths of the majors to access the global market. We understand discussions with a number of key players in the diesel and oil market are underway.

PA believes that Oxonica will need to carefully balance its resource allocation for conducting individual customer trials / conversions and for developing strategic partnerships with oil majors/additives players which potentially allow access to more of Envirox™'s potential market.

### **3.1.4 Related and Competitive Technologies/Products**

Fuel Borne Catalysts (FBCs) are a small segment within a large market for diesel additives. Within this market there are relatively few products that directly compete with Envirox™ on the basis of fuel economy, with the majority marketed for emissions control. The main products regarded as related or competitive to Envirox™ by Oxonica are:

#### *Platinum Plus*

Platinum Plus is an FBC from Clean Diesel Technologies ("CDT"), a company trading on the American OTCB market under the symbol CDTI and on the AIM market of the London Stock Exchange under the symbols CDT and CDTS. The company has a range of emissions control and enhanced fuel economy products. Platinum Plus is a ceria / platinum catalyst at low dosages (4-8ppm) blended in a diesel detergent and petroleum distillate carrier. Platinum Plus acts as a combustion catalyst, and CDT reports improved fuel economy (3-15 per cent.), reduced particulates (10-25 per cent.) and reduced NOx (11 per cent.).

CDT reports fleet trials in waste, beverage, grocery and fuel distribution sectors, demonstrating average fuel economy improvements of 7 per cent.. Its reported commercial strategy is to directly supply customers through dispensing into bulk storage tanks, although some on-board dosing is under development.

Platinum Plus has been approved by German and Swiss governments under VERT in combination with a diesel particulate filter ('DPF'), by the US EPA for use in bulk fuel by refiners, distributors and truck fleets and in combination with catalysed wire mesh filter systems, and the US Mining safety and health administration for underground use. In the UK, the Department of Health was satisfied that the platinum emission was not in an allergenic form and would be below the level to cause human toxicity.

#### *Greenplus*

Greenplus is a hydrocarbon based combustion catalyst produced by Biofriendly Corporation (UK). Biofriendly indicates that FedEx Freight, Ford Motor Company and Fetzer Vineyards have tested Green Plus for fuel economy, with fuel economy improvements of 6-9 per cent. depending upon the condition of the vehicle and the fuel used. The company's web site indicates that Green Plus employs nanotechnology to improve fuel economy and reduce emissions, and that Green Plus is a liquid combustion catalyst that is added in very small quantities to fuel in order to create a more complete, cooler and more linear burn. Biofriendly is a privately held company with offices in the US and UK.

#### *Enerburn*

Enerburn is a fuel borne Ferrocene catalyst from Enersteck, originally developed by Nalco / Exxon Energy Chemicals. Enersteck, ticker ETCCKE on OTCBB, develops and markets a fuel borne catalytic engine treatment for diesel engines known as EnerBurn(TM). The product is marketed as a combustion accelerant, with applications in each of the major diesel market segments. The Ferrocene forms a catalytic coating on the combustion chamber and piston head, which lowers the activation temperature for carbon combustion and accelerates the combustion process. Performance claims are an increase in fuel economy of 10 per cent., reduced engine wear of 40-50 per cent., increased horsepower of 4 per cent., smoke reduced by 25-60 per cent. and NOx reduced by 10-15 per cent..

#### *Eolys*

Through its use of ceria, Eolys, from Rhodia, a Speciality Chemicals company with annual sales of €5.2Bn in 2004, can be considered a related product. It is aimed at diesel particulate filter regeneration and marketed on the basis of emissions management. The product forms a compatible mix with diesel and other diesel additive packages, and generates cerium dioxide

during combustion. The Cerium Dioxide catalyses soot in the diesel particulate filter, assisting in its regeneration. The product is supplied from an onboard canister, is mixed automatically with diesel and is dispensed every 400km, taking 2-3 minutes to re-generate the filter. The additive tank contains enough product for 80,000km before a refill is required.

Particulates emissions reduction of 96 per cent. in Peugeot 607 and 306 cars is claimed. No claims on fuel economy are made in the marketing literature.

The Eolys product recently achieved VERT approval for use with DPF's. Eolys has EPA approval in the US, for use in combination with DPF's.

PA has reviewed product specification sheets, customer testimonials and press articles on these competing products, but has not verified their claims.

### **3.1.5 Regulatory Issues**

Two main regulatory issues for the uptake of Envirox™ are discussed here:

#### *Regulation of Diesel Emissions*

Envirox™ has gained the necessary approvals, where required, for use in EU and Asia where it currently supplies product. In the US, Envirox™ requires EPA approval before being launched for the on-road market. An initial set of emissions data has been generated by South Western Research Institute in support of Oxonica's regulatory activities. The objective of these tests was to determine whether any new emitted species were created during combustion of Envirox™ doped fuel. The test results indicate that no additional compounds above detection limits were found in the exhaust. Ceria particulates collected after 125hrs of engine operation were found to be insoluble. SwRI's report concluded that the regulated emission rates with Envirox™ were slightly higher than baseline 211b fuel (it should be noted that the fuel tested is an old formulation originally used in the 1970s). PA understands Oxonica has made EPA submissions for Envirox™ in April 2005 but as yet, the EPA has made no response.

No Harms data supplied by Oxonica from tests on Envirox™ in two different fuel types indicate no negative effects on fuel parameters such as corrosivity, stability, injector blocking and fuel pump wear.

#### *Specific Health, Safety and Environment Issues Regarding Envirox™ and Cerium Dioxide*

Cerium is the 26th most abundant element in the Earth's crust and is commonly found in concrete and automotive catalysts. In Envirox™ the mean particle size is in the range of 10-20nm and its concentration in the carrier solvent is 2 per cent.w/v. The carrier is an aliphatic / cycloaliphatic solvent which is combusted during the diesel combustion process. Ceria is non-combustible.

Oxonica has examined a number of potential issues for use of Envirox™:

- Human Health – based on HEI Communication 9 'Evaluation of Human Risk from cerium Added to Diesel Fuel' by the Health Effects Institutions in 2001.
  - It examined human health impacts of Ceria based fuel additives
  - Based on available data, the report suggested that Ceria has low toxicity
- Toxicity, Skin Irritation and Reverse Mutation studies
  - Three separate projects were sponsored at SafePharm Laboratories by Oxonica
  - No cytotoxicity effects from ceria found, it was not considered to be a potential irritant to the skin in vivo, and was considered non-mutagenic
  - A study at University of Rouen looking at organotype cultures of rat lung showed no inflammation or impairment in cell viability, glutathione dependent metabolism or oxidant stress activity from ceria
- Environmental effects – based on a report commissioned from a European University
  - No major soil contamination reported relative to levels of ceria already present in the soil

- Benefits to the environment accrue from reduced particulate emissions from diesel engines
- Eco-efficiency profile – based on a BASF AG process to evaluate ‘cradle to grave’ characteristics of products
  - Envirox™ containing fuel was found to be more eco-efficient than un-additised fuel due to improved fuel economy and emissions reductions

PA believes that Oxonica has taken a reasonable approach to examining the potential health, safety and environmental effects of Envirox™ by retaining toxicology, environmental and ecological expertise in support of its test programme.

Regulation of the release of nanoparticles to the environment is an area of international activity, as evidenced by the recent UK Royal Society and Royal Academy of Engineering report on the implications of nanotechnology. We believe that Oxonica is actively engaged in the debate, including involvement with Nanosafe and Nanojury. Oxonica will need to maintain this level of ongoing activity in the regulation of nanoparticles, and may need to carry out further product safety testing to meet any future legislative requirements.

### **3.1.6 Manufacturing**

Oxonica has entered into a project collaboration agreement and is currently negotiating a supply agreement with Advanced Nanotechnology Limited (“ANO”) under which ANO will supply Envirox™ to Oxonica. ANO is based in Perth, Western Australia, having spun out of the University of Western Australia to commercialise a proprietary nanopowder production technology, MCP™. ANO and Samsung Corning Co Ltd jointly own the MCP™ nanopowder manufacturing process, with rights to independently develop and commercialise product applications of MCP™.

MCP™ is a dry milling process that induces mechanochemical reactions, resulting in nanoparticle formation within a salt matrix. ANO is the single supplier of ceria nanoparticles to Oxonica. Oxonica is currently negotiating the terms and conditions of a formal supply agreement with ANO. No alternative supplier of ceria nanoparticles has been qualified for use in Envirox™ although a number of potential supplier’s products are under test. After shipping Ceria dispersion to the UK, the final product is created from a mix of the ceria dispersion in a solvent, ready for shipping in standard 45 gallon drums. This step is carried out at Oxonica’s Oxford facility. In the future Oxonica plans to move the remaining manufacturing steps to Australia where ANO will carry out the complete process.

Oxonica indicates that ANO has communicated that with additional capital investment in new process equipment, the manufacturing capacity at ANO is sufficient to meet Oxonica’s forecast sales of Envirox™ for the next 3 years.

### **3.1.7 Risks and Limitations**

PA considers there to be a number of risks for the commercial exploitation of the Envirox™ product, including:

- Using ANO as a single supplier of ceria may limit manufacturing capacity for Envirox™, and may make growth of revenue dependent on ANO’s ability to consistently produce product to the correct specification. Oxonica is currently investigating other supply options.
- Failure to gain EPA approvals would limit uptake of the product in the North American on-road market and potentially prevent strategic partnerships being developed. EPA submissions have been made, and Oxonica is awaiting a response.
- Environmental and emissions regulations are continuously evolving. Any significant changes in the nanoparticulate regulatory environment (e.g. for metallic nanoparticles) may delay or limit roll out of Envirox™. Oxonica participates in collaborations to inform the debate on nanoparticles.

- Limited business development and technical support resources may restrict the number of new customer trials, delaying growth in Envirox™ revenues. Oxonica intends to use trial data and customer testimonials to convince new customers to roll out Envirox™ without the need for lengthy trials wherever possible.
- Re-formulation work may be required to roll out Envirox™ into other sectors and where alternative diesel fuels are used (e.g. heavier marine fuels, biodiesel etc.)
- Fundamental physics and chemistry of the combustion process are still to be fully characterised, influencing the opportunity to optimise Envirox™ performance. Oxonica has a development plan for further testing, but these plans may need to be expanded to fully understand the underlying molecular mechanisms, or characterise performance in a wide range of engine or fuel types
- Lack of partnerships with global diesel or additives players limits access to the market, and may mean Oxonica is reliant on direct customer sales with implications on resources and long term growth. Oxonica is currently in discussions with a number of major players
- Other technical solutions for improving fuel economy may be developed, providing higher levels of competition for Envirox™. Oxonica has an applications development team which can be focused on identifying improvements to Envirox™ performance.

### 3.1.8 Future Development

Oxonica's management has indicated that the focus of activity for the near term will be on technical support to assist the conversion of new customer prospects into sales. In the long term, Oxonica has indicated that there are opportunities to expand Envirox™ into other market segments such as marine diesel. The move into other segments, using heavier grade or lower quality fuel, will potentially require development of new formulations and additional trials.

## 3.2 Optisol™

Oxonica has developed a nanoparticle based UV absorber product called Optisol™. Optisol™ is based on manganese doped TiO<sub>2</sub> material. Oxonica considers there to be a number of applications for this material. The most advanced is a component for suncare and cosmetics products. In the UK, Boots plc has evaluated the technology, and launched the first suncare products based on Optisol™ as part of its Soltan range.

### 3.2.1 Product Merits

The principal function of a sunscreen is to protect the skin against the harmful effects of sunlight. The main source of damage is from the UV portion of the spectrum that is typically segmented into two bands relevant to sunlight damage:

- UVB 290-320nm
- UVA 320-400nm

The principal component of sunlight that causes sunburn is UVB. UVB penetrates the epidermis, and causes swelling, redness, dryness, itching, epidermal thickening and degeneration of collagen. Physicians and scientists believe that UVB is the principle cause of skin cancer. Studies have also established that UVA is a considerable factor in photoaging and hyperpigmentation and has also been implicated in skin cancer development. There is a focus within the suncare industry on protection from both UVB and UVA parts of the spectrum.

Optisol™ has been designed to incorporate Manganese (Mn) ions into a bulk TiO<sub>2</sub> (rutile) matrix. Undoped TiO<sub>2</sub> is currently a common component in sunscreens. The introduction of Mn modifies the absorption spectra of TiO<sub>2</sub>, increasing its absorption in the UVA range, in comparison to undoped TiO<sub>2</sub>. The manganese dopant also minimises radical formation at the particle surface and has radical scavenging properties to increase formulation photostability. The modified absorption spectrum imparts an off-white colour to the product. Much of the testing and development work on Optisol™ has been reported in peer-reviewed scientific publications and literature, and the underpinning science appears well understood.

Optisol™ has three potential benefits which address issues recognised as important in the suncare and cosmetics industry:

- Broadband absorption in the UVB and UVA regions
- Minimised light generated production of potentially harmful free radicals
- Radical scavenging properties to improve photostability of suncare and cosmetics formulations

#### *UV Absorption Performance*

Having reviewed data from Oxonica's comparative testing of Optisol™ against competitive products, PA notes an improved UVA absorbance curve for Optisol™, although UVB appears lower than one of the competitors products which Oxonica believes uses the Anatase form of TiO<sub>2</sub>. Anatase TiO<sub>2</sub> has higher UVB absorption but is more photoactive than the Rutile TiO<sub>2</sub> used in Optisol™. Optisol™ has achieved a 5-star Boots rating, a measure of UVA protection, and a UVA/UVB ratio of 1.05. Additional testing has shown Optisol™ to have a critical wavelength of 385nm, a measure of UVA absorption capacity. Oxonica's claim of broadband UVA and UVB protection is based on these results.

#### *Free Radical Generation*

TiO<sub>2</sub> particles under UV radiation have been shown to generate free radical species. Free radical species have been shown to damage both deoxyribonucleic acid (DNA) and ribonucleic acid (RNA). It has also been demonstrated that free radicals generated at the surface of TiO<sub>2</sub> particles induce mineralisation of organic compounds commonly found in sunscreens, causing a reduction in sunscreen efficiency. In current approaches, TiO<sub>2</sub> particles are surface coated to avoid the formation of free radicals.

The addition of Mn into the TiO<sub>2</sub> structure in Optisol™ minimises the generation of radicals at the surface of the particle. Studies carried out by Oxonica have shown that Optisol™ produces fewer free radicals than undoped TiO<sub>2</sub> (both coated and uncoated). PA has reviewed Oxonica's test data and agrees that free radical generation is inhibited for Optisol™ in comparison to other grades of undoped TiO<sub>2</sub> tested.

#### *Free Radical Scavenging*

Sunscreens consist of a formulation that includes both organic and inorganic UV absorbers. Both classes of materials are typically required to obtain the correct level of protection. The presence of UV generated free radicals can destabilise the sunscreen formulation. Optisol™ potentially addresses this photostability issue as the Mn dopant on the surface has the ability to scavenge radicals that are formed in the formulation. Mn undergoes a redox reaction which deactivates the free radical. PA notes that Oxonica's test data, from tests on stable DPPH radicals, indicates a significantly higher rate of free radical scavenging from Optisol™ in comparison to the TiO<sub>2</sub> tested. PA agrees that Optisol™'s ability to scavenge radicals has the potential to stabilise formulations against photo-induced degradation and thus provide longer-term protection to the user.

Optisol™ has also been demonstrated to stabilise components in anti-aging formulations such as Vitamin C, Vitamin E and Kinetin. PA agrees with Oxonica that this potentially opens up the possibility to use Optisol™ to protect these active ingredients in anti-aging formulations.

### **3.2.2 Commercial Potential**

The initial market targeted for Optisol™ is in suncare and cosmetic products. Kline & Company Inc. estimated that the global market for UV absorbers for suncare products was between \$250 and \$350 million in 2004. This can be considered as the maximum current addressable market in suncare UV absorbers. It was estimated that 25 per cent. of this market was for inorganic materials in 2004 yielding a potential market of \$62.5 – \$87.5 million in inorganic UV absorbers for suncare products. The proportion of inorganics to organics has been increasing over the past few years based on previous market data. Major global players in suncare (with market

share determined by Kline & Company in brackets) include Beiersdorf AG (11.7 per cent.), L’Oreal (7.2 per cent.), Johnson & Johnson (6.4 per cent.), Schering Plough (6.1 per cent.), Playtex (4 per cent.), Sara Lee (2.3 per cent.), Tanning Research Labs (2.1 per cent.), and Boots (1 per cent.). These major brand owners are supplied with UV absorbers from major chemical companies including BASF, Ciba, Uniqema, etc.

### 3.2.3 Commercial Strategy

Oxonica is pursuing a commercial strategy of working closely with the main brands in sunscreen products, to date principally with Boots in the UK. The strategy is to work closely with the brand owners in the development phase with the brand owner conducting the majority of formulation work to ensure product compatibility. Boots has recently launched two SPF products for facial sun protection using Optisol™. Oxonica is currently in discussions with a number of global suncare and skin care brands on the use of Optisol™.

PA believes that the commercial strategy for Optisol™ is appropriate, making use of Oxonica’s capabilities in nanoparticle industrialisation whilst accessing the expertise of brand owners for formulation development and marketing /sales to the consumer. However, as the market matures, it is likely that Oxonica will face pricing pressure. This will be dependent on convincing brand customers, and in turn end consumers, of the value proposition for Optisol™. PA agrees with Oxonica that product extension into the anti-aging market may present an opportunity to sustain a premium price position.

### 3.2.4 Competition

To achieve optimum performance in a sunscreen it is likely that a combination of organic and inorganic absorbers will be needed.

#### *Inorganic UV Absorbers*

TiO<sub>2</sub> based UV absorber manufacturers and or suppliers include BASF, Merck KgA, Kemira Pigments, Tri-K Industries, Sachtleben Chemie GmbH, Particle Sciences Inc, and Sunjin Chemical. Zinc Oxide (ZnO) based UV absorber manufacturers and or suppliers include BASF, Elementis, and Symrise.

ZnO tends to have poorer absorption coefficients than TiO<sub>2</sub> leading to a higher absorber concentration requirement to achieve similar protection levels. The higher ZnO concentrations tend to lead to strong white pigmentation and potentially coarse formulations. Other suppliers produce coated TiO<sub>2</sub> and ZnO products with a range of coatings and surface modifications to aid formulation and dispersions.

#### *Organic UV Absorbers*

There are a wide range of organic UV absorbers approved by the US Food and Drug Administration (FDA), and there are a number of products on the market without this approval. Tinosorb-M produced by Ciba is based on an organic particle, which functions as a micro-pigment and UV absorber. Ciba claims UV stability is created by dissipating energy from UV absorption through isomerisation in addition to light scattering and reflection. Tinosorb-M has been shown to increase stability of Octyl Methoxycinnamate (CMC) in trials. It has a critical wavelength of 388nm and a UVA/UVB ratio of 1 as measured by Ciba.

The table compares the critical wavelength and UVA/UVB ratio for Optisol™ and competitive products. The higher the critical wavelength the better it’s UVA performance. The higher the UVA/UVB ratio the higher the protection in UVA range.

	<i>Critical Wavelength (nm)</i>	<i>UVA/UVB ratio</i>
Optisol	385	1.05
BASF Uvinul	380	0.78
Tayca MT-100SA	383	0.87
Tinosorb M	388	1

PA agrees the data indicate that Optisol™ has broadband UVB and UVA absorption. Many sunscreen materials have strong UVB absorption, but there are a more limited number of efficient UVA absorbers. These include Avobenzone, ZnO, Mexoryl (patented by L'Oreal but not yet registered in US) and Tinosorb M (not yet registered in US).

Optisol™ has combined broadband UVB/UVA absorption and radical scavenging activity that none of the other products appear to claim, although some other products do claim to protect components in the sunscreen formulation.

### **3.2.5 Regulatory**

The Cosmetics directive 76/768/EEC of the Council of European Communities is the main regulation for sunscreens in Europe. There is a list of sunscreen actives with maximum allowed in-use concentrations. J.Ferguson of Skinnovation concluded that doped TiO<sub>2</sub> was considered as acceptable in Europe with the proviso that it does not affect safety. The use of Optisol™ in sunscreen formulations has been discussed verbally with the FDA in the US. The FDA confirmed that the United States Pharmacopoeia and National Formulary were silent on the question of manganese in the formulation – as long as the formulation complies with USP26 and NF21 it is suitable for sunscreen formulations.

In Australia sunscreens are classified as therapeutic goods or OTC medicines. As in Europe there is a list of allowed active sunscreen ingredients and maximum allowed concentrations. Optisol™ has regulatory approval in Australia.

Oxonica has carried out a number of tests on health and safety effects of Optisol™ at SafePharm in the UK. These include:

- EC B40 In Vivo – it was concluded that it is unlikely to be an in vivo skin irritant
- BS EN ISO 10993-5 In Vivo cytotoxicity using L929 cells and indirect contact method – it was found to be non-cytotoxic
- EC B41 Modified in vitro NRU Phototoxicity assay using 3T3 cells – it was found to be non-photo toxic
- OECD 471 EC B14 In vitro Ames test for gene point mutations in bacterial cells – it did not induce mutations

PA believes that Oxonica has taken a reasonable approach to examining the potential safety effects of Optisol™ by retaining toxicology expertise in support of its test programme.

### **3.2.6 Manufacturing**

Oxonica has a strategy of outsourcing the manufacture of its products. Umicore, a Belgian listed multinational, manufactures Optisol™ for Oxonica. This is an exclusive relationship limited to cosmetics. Umicore has specifically invested in specially developed plant with a design capacity to meet anticipated Optisol™ volumes for the next 2-3 years.

### **3.2.7 Risks and Limitations**

PA considers there to be a number of risks and limitations in the business plan for Optisol™, including:

- The technical benefits of Optisol™ are potentially challenging to communicate in the consumer marketplace and may be difficult for Oxonica to control as it is not the owner of the suncare brand.
- Competitive Products – There are a number of competitive materials on the market. While these may not be capable of achieving all the benefits of Optisol™ in a single component, it may be possible to achieve a similar functionality by a combination of components using both organic and inorganic materials. This potentially complicates the formulation process and may increase cost for competitive products.
- Competitive environment – The UV absorber market is currently dominated by large multi-national chemical companies with strong commercial and technical resources.

- Single source of supply – Umicore is currently the sole supplier of Optisol™ to Oxonica from a single plant. Umicore indicates that further scaling up of capacity will become a priority as volumes approach target sales in 2007. In the course of evaluating potential suppliers of Optisol™, Oxonica indicated that some traditional TiO<sub>2</sub> manufacturers were reluctant to introduce Mn dopant into their plant for colour contamination reasons.

## **4. Oxonica's Longer Term Product Pipeline**

### **4.1 Biodiagnostics**

#### **4.1.1 Product Merits**

Oxonica's Surface Enhanced Resonance Raman Spectroscopy ("SERRS") development is focused on the bio-diagnostics market. The SERRS technology is licensed from the University of Strathclyde, and uses a linkage between a nanoparticle based Raman label system with a target capture biology (e.g. DNA or antibodies) targeting a range of multiplex assay applications. The technology is based on an enhancement of the Raman spectral response of dye molecules through adsorption onto silver nanoparticle colloids. Detection of biomarkers is enabled by encapsulation of the silver colloid into a polymer shell that can be conjugated to target molecules of interest.

SERRS has the potential to allow detection of multiple biomarkers in a single sample, such as whole blood, using a single detection instrument. This multiplexed approach may enable development of complex assays for diseases, such as Alzheimer's, that require simultaneous detection of panels of analytes. Laboratory testing of dye labelled oligonucleotides indicates that the SERRS approach has a detection limit around three orders of magnitude better than that of fluorescence, a standard approach in the diagnostics market.

PA believes the science on which the product is based is sound, and has been published in peer reviewed journals, and the experimental data supports the claims by the University of Strathclyde and Oxonica on the enhancement of the Raman effect. The benefits of increased sensitivity may offer advantages in terms of earlier detection of disease markers if robust SERRS labels with low non-specific binding can be developed.

PA has reviewed Oxonica's development plan for the biodiagnostics chemistry product, and agrees that the timescales for development up to initial demonstration of the assay in controlled solution is reasonable, assuming no major technical issues are encountered and that an established capture chemistry is used. The plan does not extend to activities beyond initial tests in aqueous solutions. We note that the plan will need to be developed to include demonstration of proof of principle in clinical samples and subsequent activities to gather data required for regulatory submissions.

#### **4.1.2 Commercial Potential**

According to Kalomara Information, the global In Vitro Diagnostics (IVD) market is estimated to be \$31.7 billion. In the main sectors addressable by SERRS (immunoassays, microbiology and molecular diagnostics) the market size was estimated to be \$9.6 billion in 2005, covering reagents, instruments and consumables. According to Business Communications Company Inc, reagents will account for ~75 per cent. of the IVD market by 2008. If we apply the 2008 percentage split to the 2005 market size estimate, this would give a potential market size of \$7.2 billion.

More specific to the SERRS product, the market for high density multiplexed assay technologies makes up 25 per cent. of the total microarray market, approximately \$1.5 billion in 2003 and growing by 50 per cent. per annum according to Drug and Market Development Publishing. On these estimates the market for high-density multiplexed assays would be around \$840 million in 2005.

There are a number of drivers for pharma and diagnostic companies to move into multiplexed assay technologies. Theranostics, pharmacogenomics and genetic testing are medium to long-term drivers for new diagnostic technologies which support improved and lower cost healthcare. For early stage detection of complex, multi-factorial diseases and genomic / proteomic profiling or monitoring the efficacy of therapeutics, multiple biomarkers may need to be assayed. Robust, multiplexed assays that enable multiple biomarker detection from a single biological sample are potentially attractive for such applications.

PA believes that the longer term drive towards personalised medicine, and the use of theranostics and genetic / proteomic screening is likely to require development of high sensitivity, high throughput multiplexed assays. This is an emerging area, both in terms of technical and market development, and as such we believe there is a degree of uncertainty over the timescales for the implementation of these new approaches to healthcare, and the degree to which Raman techniques can penetrate the market.

#### **4.1.3 Commercialisation Strategy**

Oxonica has been in discussions with a potential customer regarding the development of a bacterial test assay for blood platelets. These discussions have led to Oxonica developing a market specification for the assay that is being used by the Group to direct the technology development of a demonstration assay that may prove the value of the SERRS multiplexed approach. PA believes that Oxonica is taking a suitable route to exploiting SERRS, demonstrating the technology in a niche product area to build confidence.

The second stage of the commercialisation strategy, having proven the technique on demonstration assays, is to begin discussions with major clinical diagnostics companies. PA agrees that in the long term, for Oxonica to succeed in this area, strategic partnerships with major diagnostics companies or instrumentation developers are likely to be required. The In Vitro Diagnostics market is dominated by a small group of key players (such as Roche, Abbott, Johnson and Johnson, and Beckman Coulter) with whom Oxonica could partner. However, Oxonica will need to prove significant benefits from its technology before major diagnostic companies are likely to be persuaded to move from traditional fluorescence and chemiluminescence techniques to Raman based approaches.

#### **4.1.4 Competition**

There are a number of competing sensing technologies in use in the diagnostics sector, including fluorescence, chemiluminescence and colorimetry/photometry. They are established, and in general, well-understood and lower cost than current Raman instrumentation. In the area of multiplexed assays, competitor technologies include PCR.

Companies, primarily start ups, working on bead based approaches for multiplexed assays include Nanoplex, Nanosphere, SmartBead, Evident, Quantum Dot and Crystal Plex. Bead technologies under development include alternative Raman approaches and the use of nano-dimensioned quantum dots.

PA notes that multiplexed technology is still in the early stages of development, and no single company or technology appears to be dominating the area.

#### **4.1.5 Risks and Limitations**

Having reviewed the development plans, market data and drivers for the uptake of multiplexed assays PA considers the following to be risk areas:

- Raman is not an established approach in diagnostics and there may be some resistance to replacing more widely used platforms such as fluorescence or chemiluminescence
- Factors such as regulatory hurdles and reimbursement policies may delay the implementation of new multiplex assay technologies
- There are a small number of large players in the target markets with whom Oxonica will need to establish strategic partnerships and considerable competition from other technology based developers looking for similar relationships
- Technical development is still ongoing, and there are risks in achieving performance benefits using larger numbers of multiplexed dyes in real biological (clinical) samples, and the potential need to develop instrumentation platforms in tandem with the label technology

## **4.2 Optisol™ Polymer and Coating Additive**

### **4.2.1 Product Merits**

As an extension of the Optisol™ product, Oxonica is investigating the potential of using manganese doped titanium dioxide and manganese doped zinc oxide as additives to polymers and coatings to provide protection against UV damage. Exposure to sunlight and some artificial light can have adverse effects on the useful life of plastic products and coatings. UV activation of catalyst residues, from polymerisation and processing, can initiate degradation processes such as discoloration, disintegration of chemical bonds and loss of physical properties.

A number of tests have been carried out by Oxonica in which the performance of Mn doped ZnO doped polymers was compared to polymers doped with TiO<sub>2</sub> pigments. The data indicate that addition of ZnO does provide some UV protection in a number of polymers, but the addition of Mn doped ZnO significantly increases the protection level. In some cases additive packages were required to prevent polymer damage due to Mn.

Having reviewed the experimental data, PA agrees that addition of Mn doped ZnO reduces the UV impact on a range of polymers. However the range of tests will need to be expanded to cover potential changes in physical and chemical properties on the polymer due to the additive.

### **4.2.2 Commercial Potential**

The market for UV light absorbing and anti-oxidant polymer additives is estimated to be \$2 billion in 2005 according to a report 'Plastics Additives' from Global Industry Analysts Inc. The accessible market for Oxonica will be dependent on the price points obtained. The main application areas for UV absorbers include the automotive sector (e.g. light fastness of vehicle interiors), furniture and architectural structures, and agricultural films (e.g. UV protection for crops).

### **4.2.3 Competition**

There are a number of approaches to UV protection including UV light absorbers (Benzotriazole, Benzophenones etc), light scavengers / decomposers (hindered amine light stabilizers 'HAL') and quenchers. No data is yet available on the comparative performance of Optisol™ and these alternative approaches. On a global basis, Benzotriazole and HAL's dominate the market, making up 54 per cent. and 34 per cent. of annual volume respectively in 2000 according to Business Communications Company Inc (BCC).

The industry is made up of a number of speciality chemicals companies including Ciba Speciality Chemicals, Great Lakes Chemicals, Akcros, BASF, Clariant, 3V Sigma, Cytec Industries, Cabo, Degussa, Fairmount Chemical and Asahi Denka Kogyo. These companies are significant players in the speciality chemicals sector, and many report on-going development programmes in this area.

### **4.2.4 Commercial Strategy**

Optisol™ in polymers and coatings is at an early stage of development, with some laboratory based testing complete. Oxonica is in discussions to license its technology. PA agrees that at this stage of development, partnership with a major Speciality Chemicals Company is an appropriate approach to take. Oxonica has indicated that the market for UV stabilisers is cost sensitive, and therefore in the long term some consideration of price-volume economics will need to be made.

### **4.2.5 Risks and Limitations**

There are a number of risks that Oxonica may need to address, including:

- Technical risks in developing robust UV absorbing additives which do not change the chemical / physical properties of the product
- Limitations due to the potential requirement for further additive packages, e.g. stabilisers
- Following a niche strategy will require careful selection of appropriate target segments and careful consideration of their price points

- Resource focus on Optisol™ in the sunscreen and cosmetics market may extend the time to develop the polymer protection product
- A high degree of competition from incumbent players and evolving technologies in the market place may hinder growth of Mn doped ZnO as a polymer or coating additive

## 5. Summary

Oxonica's core competences lie in inorganic chemistry and nanoparticle physics, taking basic scientific concepts and applying knowledge of physical chemistry to produce specific functionality for applications in a diverse range of market sectors.

It has two products on the market, Envirox™ and Optisol™. PA considers these product introductions as evidence of Oxonica's capability in taking ideas from the science stage, through product development and to market. It has other development projects in bio-diagnostics and UV absorbers for protection of plastic materials and coatings and research activities in security markers and transparent conducting coatings.

Envirox™ is a fuel borne catalyst, consisting of cerium dioxide nanoparticles, for use as an additive in diesel combustion engines. Laboratory studies and field trials have demonstrated fuel savings in the range 5-10 per cent.. Oxonica is working to develop its understanding of the fundamental molecular mechanisms of the additive and further investigations are planned as part of its ongoing development activities.

Oxonica has initially targeted the bus segment for market development, the rationale being high diesel consumption, pressure for improved emissions control and the use of centralised fuel depots. In the long term, Oxonica wishes to create strategic partnerships with large, established players in the diesel and fuel additives market, and has had some success with this approach in the Philippines.

Envirox™ has gained the necessary approvals, where required, for use in EU and Asia where Oxonica currently supplies product. Envirox™ has been submitted for EPA approval in the US. PA believes that Oxonica has taken a reasonable approach to examining the potential health, safety and environmental effects of Envirox™ by retaining toxicology, environmental and ecological expertise in support of its test programme.

Optisol™ is UV absorber based on manganese doped TiO<sub>2</sub> nanoparticles. Optisol™ has three potential benefits, which address issues recognised as important in the suncare and cosmetics industry, specifically broadband absorption in the UVB and UVA regions, minimised light generated production of potentially harmful free radicals and radical scavenging properties to improve photostability of suncare and cosmetics formulations.

Oxonica is pursuing a commercial strategy of working closely with the main brands in sunscreen products, to date principally with Boots in the UK. Boots has recently launched two SPF products for facial sun protection using Optisol™, and Oxonica is currently in discussions with a number of other global suncare and skin care brands on the use of Optisol™. PA believes that the commercial strategy for Optisol™ is appropriate, however, as the market matures, it is likely that Oxonica will face pricing pressure.

In the development pipeline, Oxonica's bio-diagnostics development has the potential to allow multiplexed detection of biomarkers in a single sample, such as whole blood, using a single detection instrument. Multiplexed assays are an emerging area, both in terms of technical and market development. We believe there is a degree of uncertainty over the timescales for the implementation of these new approaches to healthcare, and the degree to which multiplexed techniques can penetrate the market. An additional potential product is the use of manganese doped zinc oxide as an additive for UV protection of polymers.

Oxonica's strategy is to outsource manufacturing of its products, and currently has single source agreements for development and manufacture for Envirox™ and Optisol™. PA believes outsourcing of manufacturing is an appropriate strategy given the diversity of products and markets that Oxonica intends to address, and we understand that the company is examining options for additional supply sources in both product areas.

In summary, going forward Oxonica's business will rely on:

- The continuing ability to translate basic scientific concepts into products
- Active management of its intellectual property portfolio
- Management of its outsourced manufacturing supply chain, and developing relationships with additional suppliers
- Balancing the need for new product development and technical support for existing product lines
- Gaining access to wider customer base(s) in its target markets by developing strategic relationships that leverage the commercial and market strengths of key players in those markets
- Maintaining activity in the debate over regulation of nanoparticles, and being aware of the potential need for further product safety testing to meet any future legislative requirements.

Yours faithfully

Dr. Mark R. Humphries

For and on behalf of  
PA Strategy Partners Ltd

## PART IV

### Patent Agent's report

Set out below is the full text of a report received from JA Kemp & Co:

EUROPEAN PATENT ATTORNEYS · CHARTERED ATTORNEYS · TRADE MARK ATTORNEYS

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14 July 2005

Dear Sirs

#### **PATENT AGENTS REPORT**

##### **Introduction**

This is a factual report setting out the patent and trade mark portfolio of Oxonica plc and its subsidiary undertakings, or where the context requires in relation to the period prior to 16 June 2005, Oxonica Materials Limited and its subsidiaries, including Oxonica Energy Limited ("Oxonica"), and commenting on a third party patent. It includes not only patents and applications of which Oxonica is the proprietor, but also patents and applications under which Oxonica is licensed. It was prepared by J. A. Kemp & Co., the firm of patent attorneys that handles the majority of Oxonica's patent cases and all of its trade mark cases.

##### *J.A. Kemp & Co*

J.A. Kemp & Co is a leading firm of UK and European Patent and Trade Mark Attorneys. It was founded over half a century ago. It is based in London's Gray's Inn, and has offices also in Oxford and Munich. The firm includes over 35 qualified European Patent Attorneys, UK Chartered Patent Attorneys and Trade Mark Attorneys as well as solicitors. The breadth of expertise and experience of the Partners, assisted by qualified staff, technical assistants and consultants means that it offers a complete service in all technical subject matters. On the patent side, the firm has particular strengths in chemistry and materials, as well as in biotechnology, pharmaceuticals, electronics, software related inventions and engineering. Its trade mark practice is also strong and represents clients before the UK Trade Mark Registry and OHIM, the European Community Trade Marks body, and prosecutes International Trade Mark applications under the Madrid Protocol. The firm's client base is extensive, ranging from major multi-national groups to small start-up companies at the leading edge of their fields as well as prestigious universities.

John Benson is a partner in the firm and heads the firm's chemical department. He graduated from the University of Bristol and has a BSc Honours in Chemistry. He qualified as a European Patent Attorney and a Chartered Patent Attorney in 1980. Mr Benson joined J.A. Kemp & Co in 1997 after working elsewhere in private practice and in an Industrial Patent Department.

He did not draft and file all of the Oxonica cases currently handled by J. A. Kemp & Co., having taken over the Oxonica work about two years ago on retirement of another partner. He had some involvement in the cases before then, and now has a good knowledge of the entire portfolio.

Monica Marshall is also a partner in the firm. In addition to being a European Patent Attorney and Chartered Patent Attorney she is a Registered Trade Mark Attorney, a member of ITMA and a European Trade Mark representative. She heads the firm's trade mark department. She graduated from the University of Birmingham and has a BSc Honours in chemistry. She joined J.A. Kemp & Co in 1968 and again in 1991 after working elsewhere in private practice.

She has been responsible for the past three years or so for all of Oxonica's trade mark applications.

### *Other patent attorneys*

Four other firms of patent attorneys handle Oxonica patent cases. The information in this report has been obtained from those firms, and where possible checked against the public record.

Those other firms and the cases they handle, identified by the Oxonica reference used in the body of the report, are as follows.

Mewburn Ellis LLP of York House, 23 Kingsway, London, WC2B 6HP (Tel 020 7240 4405) handles cases OX 071, OX 072 and OX 074.

Marks and Clerk of 19 Royal Exchange Square, Glasgow, G1 3AE (Tel 0141 221 5767) handles case OX 073.

Stevens, Hewlett & Perkins of Halton House, 20-23 Holborn, London, EC1N 2JD (Tel 020 7404 1955) handles OX 003.

Carpmaels & Ransford of 43-45 Bloomsbury Square, London, WC1A 2RA (Tel 020 7242 8692) handles OX 037.

Additionally, one case, OX 076, is being handled by the in-house patent attorney of the company, Johnson Matthey, as part of the Oxonica/Johnson Matthey DTI collaboration.

### *Scope of the report*

The role of the firm is to provide this factual report setting out Oxonica's patent and trade mark portfolio and its duties and responsibilities shall be limited thereto.

The report, set out below, gives for each patent and patent application Oxonica's internal reference, the country, the application number, or grant number where appropriate, claimed priority dates, current status and an abstract.

For each trade mark or trademark application the report will give the country, the application number, and its status.

This information was obtained from J A Kemp & Co's own files as of the date of the report in respect of those patents, patent applications, trademarks or trademark applications (the majority of the portfolio) that the firm is handling. For the cases handled by the other firms referred to above, the information was obtained from those other firms and where possible checked against publicly available information. Such other cases are identified in the report, and the names of the other firms of Patent Attorneys given.

### *A brief introduction to patents for inventions*

A patent may be seen as a bargain between the State and the inventor or his employer or assignee. The State offers a period of exclusivity (usually 20 years from filing of the application that gave rise to the patent) in return for full disclosure of the invention, which then becomes published by the patent office in question. A patent gives its proprietor the right to prevent others, by means of an injunction, from exploiting the patented invention. Other relief such as damages for past infringement may also be obtained. It does not, however, give its proprietor the right to exploit the invention: other patents may also cover the technology in question and there may be other legal reasons why the invention may not be exploited. A patent, like other forms of property or asset, can be bought, sold, or licensed.

Patent rights are national rights, although under international treaties (notably the International Convention, European Patent Convention, EPC, and the Patent Cooperation Treaty, PCT) some or all of the application procedure in member countries can be unified. The result, though, of multi-national applications is a number of national patents.

A patent is obtained by filing at an official patent office a patent application consisting of a patent specification and other supporting documents, after which the application is examined by patent office examiners to determine whether it complies first with formal requirements and later with substantive requirements as to patentability. This examination procedure almost always involves argument and amendment of the patent specification, by a patent attorney on behalf of the applicant, in order to bring the application into an allowable form. During this procedure, which may take several years, the patent application is said to be pending.

A patent specification includes: a description which gives the background to the invention, the problem to be solved, a summary of the invention and one or more specific examples of the invention, and as a result it provides the information necessary for a person with the relevant skills to put the invention into effect; a set of paragraphs called claims that define the scope of exclusivity to be provided by the patent; an abstract; and any drawings referred to in the description. In most countries patent specifications are published twice by the patent office in question. Firstly, the specification in its form as filed is published as an “A” specification, and secondly it is published in the form in which it is granted (which will contain the claims, often of narrower scope than they were as filed, that confer protection) as a “B” specification.

Patents cover products or processes that are novel, inventive and industrially applicable. To be patentable an invention must therefore be new, by which is meant it must not have been made available to the public in any way (by for example publication or use) and it must not have been disclosed in an earlier patent application in the country in question before an initial filing at a patent office. All of this earlier information is referred to as “prior art”. The situation in respect of a United States patent is somewhat different because in that country the date of invention (rather than merely the date of filing) has significance. An invention must also involve an inventive step, which means that when compared with the prior art it would not have been obvious to a person ordinarily skilled in the relevant field.

The scope of the invention, and therefore of the exclusivity to be provided by the patent, is defined by the “claims” set out in the specification. These requirements of novelty and non-obviousness must be met for every embodiment within the scope of the claims if the patent is to be enforceable for any embodiment within the scope of the claims. The broader the claims the broader the scope of protection, but the less likely they are to be valid. During the examination procedure the patent office examiner will usually raise objections that the claims are too broad on the ground that they encompass something already known or obvious; and the patent attorney will argue in return that the invention is indeed new and non-obvious, often after amending the claims to reduce their scope.

#### *The International Convention*

Under the International Convention one or more initial patent applications may be filed in, for example, one’s home country, and within a maximum of one year from the date of the earliest of them foreign applications may be filed that benefit from the filing dates of those initial applications. Oxonica usually files patent applications in the countries of interest (and usually by means of a PCT application-see below) close to the end of that priority year. This process is called “claiming priority” from the initial application or applications, and the filing dates of the initial applications are called the claimed priority dates. That initial filing date, or dates, is the date on which the invention will later be judged by the patent offices for novelty and inventiveness. Publications made before that date can be taken into account, whereas publications made on or after that date are irrelevant. It should be noted that the benefit of any claimed priority date may not in fact be realised if the foreign applications filed at the end of the year differ too much from the initial application or applications.

#### *The PCT System*

Although a number of individual foreign patent applications may be filed to obtain protection in the countries of interest, the procedure can be simplified and a useful postponement of costs achieved by making use of the PCT system under which a single international patent application is filed. Most industrial countries in the world are members of the PCT. The ultimate result of this is, however, a number of national patent applications. This is the route that Oxonica uses.

This single patent application is filed, in the case of Oxonica’s applications, at the UK patent office, after which the PCT organisation carries out a formalities examination, a search for prior art, and publishes the pending application. A preliminary substantive examination as to patentability may also be carried out at the request of the applicant.

Nowadays an international application remains in the international phase until a period of up to thirty or thirty-one months (depending on the destination country) from the initial priority application, after which it enters the national phase in the countries of interest. When in the national phase, the national patent offices carry out a patentability examination to the extent required by their national law. They then grant a patent and usually republish the specification in its final form, or they refuse the application.

### *The EPC System*

The European Patent Convention, to which thirty-one member countries are party, takes the unification of patent application procedure a stage further than does the PCT. Under the EPC the European Patent Office (the EPO) actually grants patents. It does so, however, on behalf of its member countries, and as before the result is a number of national patents. Nonetheless, the EPO will publish the granted "B" patent specification as a "European Patent Specification". That specification lists the countries designated at the time of grant. It cannot be assumed, however, that the patent is in force in all of the countries listed because certain national grant formalities must be completed, principally provision of a translation into the local language.

The EPC system and the PCT system are not alternatives: the EPC can be designated as a region in a PCT application. That is the procedure that Oxonica usually follows. Thus, at the national phasing deadline referred to above an Oxonica PCT application becomes, amongst other things, an EPC application.

### *After grant of a patent*

Third parties may apply to patent offices or courts in each country (and in respect of EPC patents they may apply for a limited period to the EPO) to have the patent revoked on the ground for example that the invention was not novel or was obvious at its priority date. The fact that a patent office agreed to grant a patent is no guarantee of its validity since the patent office examiner may have made a mistake or he may not have been aware of all the facts.

Annual fees are payable to patent offices to keep patents in force, and if such fees are not paid the patent will irrevocably lapse.

In most countries patents expire twenty years after their filing date. In general, therefore, Oxonica's patents may be expected to expire approximately twenty-one years after the earliest claimed priority date.

### *A brief introduction to registered trade marks*

A trade mark registration grants the proprietor exclusive rights in the trade mark, which are infringed by the use of the trade mark by others without their consent. The scope of this statutory right is defined by the combination of the representation of the trade mark and the statement of the goods and/or services to be covered. Generally, goods and services are classified according to an international system, in classes numbered 1 to 34 for goods and 35 to 45 for services.

Trade marks can consist of, for example, words, figures, logos and even colours, shapes and sounds.

The geographical scope of a trade mark registration is limited to the territory where it is filed. There are however now two international systems for registration, which are detailed below.

A registered trade mark is a property right. The owner of a registered trade mark can use the mark themselves, license third parties to use the mark on their behalf or assign the right to a third party altogether. A registered trade mark can be used as security against, for example, an undischarged loan.

The rights in a trade mark registration are granted for a limited term (most typically ten years) but this can potentially be renewed indefinitely (subject to compliance with the relevant local law).

In most countries, the validity of a trade mark registration is dependant upon the eventual use of the mark in the form in which it is registered, upon the goods and/or services of the registration. Most typically a trade mark must be brought into use within five years (in some territories three years) of the completion of its registration to avoid the risk of revocation for non-use.

### *Scope of rights*

In general terms, the ownership of a trade mark registration gives the proprietor the right to restrain use by a third party of an identical trade mark upon identical goods and services. They also often provide a cause of action in relation use of identical or similar trade marks, in relation to identical or similar goods and services, where that use is liable to give rise to a likelihood of confusion. Remedies available include the prevention of use by injunction and damages where loss has been suffered as a result of infringement.

### *Applications for registration*

In most cases applications to register trade marks are examined by the responsible authority in the relevant country. Signs that are, for example, exclusively descriptive of any characteristic of the goods or services to be covered, that are used in a generic sense in relation to those goods or services or are contrary to public policy or morality should be refused registration.

Many countries also carry out a search of earlier registrations or applications, and if the new trade mark conflicts with any of these, they may not allow the later application to proceed, unless the applicant is able to fulfil certain additional conditions.

Once an application has successfully passed examination, it is then published to provide a limited opportunity for any interested third parties formally to oppose the registration or to file informal observations, before a registration certificate is finally issued.

The filing of an application gives rise to a filing date which establishes the application's seniority in respect of any conflicts with third parties. However, International Convention priority (and where they exist, reciprocal arrangements) is also available for trade mark applications and may be claimed for up to six months from the filing of the first application for a particular trade mark in respect of the particular goods or services.

### *The Community Trade Mark (CTM) system*

This is an international system that provides a single trade mark registration covering all twenty-five member states of the European Union. The CTM system effectively extends over the national trade mark systems in each of the member states, but CTMs remain subject to prior national trade mark rights.

It is a unitary system and any issue affecting the validity of the right in a single member state (whether, for example, based on local linguistic considerations or prior rights) will cause the entire CTM to fail.

Unlike the UK system, the CTM office is unable to reject applications based on prior rights (although these can be raised in opposition proceedings by their proprietors). It is therefore possible that two identical or extremely similar marks could co-exist on the CTM register covering identical goods. For this reason there is not the presumption of validity for CTMs that is granted to UK registrations. The rights and remedies detailed above are available to the proprietor of a CTM registration. They can be enforced via the national courts in the member states of the European Union.

### *The Madrid System of International Registration*

The Madrid Agreement is an international treaty-based system to allow the centralised filing and management of trade mark rights in a number of national jurisdictions. The United Kingdom is a signatory to the Protocol to the Madrid Agreement and can only take advantage of this system in respect of other signatories to the Madrid Protocol.

Upon application by a trade mark owner, a central record known as an "International Registration" is created by the World Intellectual Property Organisation (WIPO). This must be based upon the details of a trade mark application or registration in the owner's home country (for the purposes of the United Kingdom this means a United Kingdom or CTM registration or application), and designate the other Madrid Protocol territories where protection is sought.

The application details are transmitted to the territories designated where they are examined and administered according to local law. The rights provided are identical to those granted to national applications.

Territorial designations under International Registrations are dependant upon the life of their home, base registration for the first five years. The system provides for centralised renewal and updating of proprietor details through WIPO. Protection can be expanded by designating new countries at any time.

#### *Common law rights – “passing off”*

In common law countries such as the United Kingdom and United States of America, rights can be built up in the goodwill in unregistered trade marks through their use in the market place. These rights exist in parallel to statutory registered trade mark rights and in some circumstances can provide grounds to oppose the registration of a later trade mark application or cancellation of a later registration.

An action for “passing off” can be used to enforce these rights, but it is first necessary to prove the existence of the rights through evidence, before going on to show that a third party has made a misrepresentation in the marketing of their goods and/or services that has or is likely to lead to confusion on the part of a substantial number of consumers and that the owner of the rights has suffered damage as a result.

### **Summary of Oxonica’s Patent Applications**

Oxonica currently owns or has licences under twenty-nine patent families, a family being one or more patents or applications in one or more countries relating to a particular invention. Each patent family, the details of all of which are set out in the list below, has its unique Oxonica reference number with the prefix “OX”. OX numbers missing from the list relate mainly to inventions where no patent applications have (yet) been filed, but also to patent families where all applications have been abandoned.

These patent families may be grouped into four technology or product areas, namely UV Absorbers (which includes the sunscreen product known by the trade mark Optisol), Fuels (which includes the fuel additive known by the trade mark Envirox), Biodiagnostics, and New Product Development.

In the list below, for each patent family an abstract is given. The abstract does not necessarily correspond to any particular patent claim, but generally reflects the scope of the case as originally filed. Following the abstract is given the country, the application number for pending applications and the grant number for granted patents, the status of the case, and for some cases brief notes are given. Where the claims have been considerably restricted in scope from that which might be expected from the abstract, this is noted in the country-by country details. Such restriction is not necessarily the end of the matter: so long as an application is pending, further applications (called divisional applications) can in general be filed that are entitled to the same priority date, and in which one can attempt to obtain protection for subject matter disclosed in the original specification but not, or no longer, protected by the case in question.

### **Oxonica’s patent portfolio**

#### **UV ABSORBERS**

##### **OX 002**

Proprietor is Isis Innovations Ltd, and J A Kemp & Co is informed that Oxonica Materials Limited is exclusive licensee.

The case covers Oxonica’s Optisol sunscreen product. It relates to a UV screening composition comprising particles which are capable of absorbing UV light so that electrons and positively charged holes are formed within the particles so as to minimise migration to the surface of the particles of the electrons and/or holes when the particles are exposed to light in an aqueous environment. In general the particles are nanoparticles and comprise reduced zinc oxide or a host lattice of titanium dioxide or zinc oxide doped with manganese or chromium.

The claimed priority date is 27 May 1998.

Australia (1)	765456	Granted	Relates to the doped embodiments
Australia (2)	2003270993	Pending	Relates to the reduced zinc oxide embodiments
EPC	99939789	Pending	Titanium dioxide/zinc oxide doped with Mn <sup>3+</sup>
Japan	2000-550455	Pending	
US (2)	6869596	Granted	Zinc oxide doped with Mn or Cr
US (2)	11/054188	Pending	

### **OX 006**

Proprietor is Isis Innovation Ltd, and J A Kemp & Co is informed that Oxonica Materials Limited is exclusive licensee.

A UV screening composition comprising nanoparticles which comprise a host lattice (preferable titanium dioxide or zinc oxide) incorporating a dopant to provide luminescent trap sites and/or killer sites, the dopant being niobium, vanadium, antimony, tantalum, strontium, calcium, magnesium, barium, molybdenum or silicon.

The claimed priority date is 1 December 1999.

Australia	15396/01	Pending	
Brazil	PI0016090	Pending	
China	00818732	Pending	Titanium dioxide/zinc oxide, vanadium dopant
EPC	00977761	Pending	Titanium dioxide/zinc oxide, vanadium dopant
India	2002/00549/DEL	Pending	
Japan	2001-541812	Pending	
Mexico	PA/a/2002/005395	Pending	
USA	10/148696	Pending	Zinc oxide with vanadium dopant
South Africa	2002/4358	Granted	

### **OX 042**

A UV sunscreensing composition for cosmetic or topical pharmaceutical use containing organic components which are photosensitive or are degraded or in which degradation is induced by another ingredient of the composition also contains as an additive doped titanium dioxide or doped zinc oxide or reduced zinc oxide. As a result the composition has a rate of loss of UV absorption which is less, by 5 per cent. or more, than an equivalent composition without the additive.

The claimed priority dates are 24 December 2002, 1 April 2003, 15 April 2003 and 27 June 2003.

PCT GB/2003/005658 Entry by 24 June 2005 into national phase in Australia, Brazil, Canada, China, EPC, India, Israel, Japan, Korea, Mexico, New Zealand, Russian Federation, Singapore, South Africa, and USA.

### **OX 054**

A polymeric composition containing organic components which are photosensitive or are degraded by another ingredient of the composition also contains as an additive doped titanium dioxide or doped zinc oxide or reduced zinc oxide. As a result the composition has a rate of deterioration of a light sensitive physical factor which is less, by 5 per cent. or more, than an equivalent composition without the additive.

The claimed priority date is 6 May 2003.

PCT GB/2004/001909 Entry into national phase due 6 November 2005

### **OX 055**

A composition suitable for veterinary, agricultural or horticultural use comprises a veterinarily, agriculturally or horticulturally active compound, and doped titanium dioxide or doped zinc oxide or reduced zinc oxide. The composition may also be for household use.

The claimed priority date is 3 June 2003.

PCT GB/2004/002191 Entry into national phase due 3 December 2005

### **OX 057**

A composition which comprises an ingredient that is adversely affected by UV light when in the presence of titanium dioxide or of zinc oxide has as an additive doped titanium dioxide or doped zinc oxide or reduced zinc oxide.

The claimed priority date is 3 July 2003.

PCT GB/2004/002891 Entry into national phase due 3 January 2006

### **OX 061**

Particles suitable for, amongst other things, sunscreens or other cosmetic or pharmaceutical use. The particles are of titanium dioxide or zinc oxide that is doped such that the concentration of dopant at the surface is greater than that at the core of the particle.

The claimed priority dates are 28 January 2004 and 5 March 2004.

PCT GB/2005/000257 Entry into national phase due 28 July 2006

### **OX 066**

A composition susceptible to free radical attack, having as a free radical scavenger nanoparticles of an oxide of a rare earth or transition metal having adjacent oxidation states.

The claimed priority date is 28 January 2004.

PCT GB/2005/000262 Entry into national phase due 28 July 2006

### **OX 077**

A composition suitable for cosmetic or topical pharmaceutical use comprising an antiaging agent together with a metal oxide that is capable of scavenging free radicals or a doped metal oxide or reduced zinc oxide. The antiaging agent is itself photosensitive or susceptible to free radical attack, or degradation of it can be induced by another ingredient of the composition.

The current case is an initial filing dated 7 December 2004 from which any later cases will claim priority.

UK 0426820 Further filings due 7 December 2005

### **OX 078**

The use of titanium dioxide or zinc oxide doped with  $Mn^{3+}$  in a cosmetic formulation as a skin toning agent.

The current case is an initial filing dated 10 March 2005 from which any later cases will claim priority.

UK 0504980 Further filings due 10 March 2006

### **FUELS**

#### **OX 034**

This case relates to a fuel additive comprising particles of cerium oxide which have been doped with a divalent or trivalent metal or metalloid which is a rare earth metal, a transition metal or a metal of group IIA, IIIB, VB or VIB of the periodic table.

The claimed priority date is 6 November 2001.

Australia	2002341189	Pending
Canada	2467957	Pending
China	02826782	Pending
EPC	02774983	Pending
Hong Kong	04106054	Pending
India	1503/DELNP/2004	Pending
Japan	2003-542310	Pending
Mexico	PA/a/2004/004253	Pending
New Zealand	533239	Pending
Philippines	1-2004-500634	Pending
Singapore	200402653-0	Pending
USA	10/494815	Pending

### **OX 037**

Handled by Carpmaels & Ransford. J A Kemp & Co is informed that the proprietor is Neuftec Ltd, and that Oxonica Energy Limited is licensee.

This case covers Oxonica Energy Limited's Envirox fuel additive. It relates to a method for improving the efficiency with which fuel is burnt, particularly in an internal combustion engine, by dispersing a particulate lanthanide oxide in the fuel. The oxide is preferably cerium oxide.

The claimed priority dates are 29 June 2000 and 13 September 2000.

Australia	20010067700	Pending	
Brazil	PI0112274-6	Pending	
Canada	2413744	Pending	
China	01814887	Pending	Oxide coated with specific anhydride
EPC(1)	1299508	Granted	Oxide coated with specific anhydride
EPC(2)	04077372	Pending	
Hong Kong	05103089	Pending	
Korea	7017804/2002	Pending	Oxide coated with specific anhydride
India	2003/00002/DEL	Pending	
Japan	2002-505928	Pending	
Mexico	PA/a/2002/12584	Pending	
USA	10/312263	Pending	

### **OX 044**

Efficiency of an internal combustion engine is improved by adding to its fuel, prior to supply, a cerium oxide, which may be doped, and optionally one or more other fuel additives.

The claimed priority date is 23 January 2003.

PCT GB/2004/000294 Entry into national phase due 23 July 2005

### **OX 047**

Efficiency of an internal combustion engine that runs on a lubricating oil/gasoline mixture is improved by adding to the lubricating oil or to the gasoline a cerium oxide, which may be doped.

The claimed priority date is 30 July 2003.

PCT GB/2004/003298 Entry into national phase due 30 January 2006

## **BIODIAGNOSTICS**

### **OX 032**

Water soluble particles of a luminescent material are prepared with a coating of an organic acid or Lewis base so that the surface possesses reactive groups. The particles comprise a rare earth metal, a doped compound semiconductor or a doped inorganic compound.

The claimed priority date is 1 November 2001.

EPC	02777468	Pending
Japan	2003-540278	Pending
USA	10/494128	Pending

### **OX 033**

Nanoparticles for biotagging or security marking comprise a compound of the formula  $X_a(YO_b)_c$ , wherein X is a rare earth metal of group IIA, IIB, IVB or VB of the periodic table, Y is a metal which forms an anion with oxygen, and a, b and c are such that the compound is stoichiometric.

The claimed priority date is 1 November 2001.

EPC	02774972	Pending
Japan	2003-540078	Pending
USA	10/494126	Pending

### **OX 039**

A composite particle comprising luminescent material; the luminescent material being either in the form of second particles embedded in a first particle, or in the form of a particle having a first coating of an organic material and a second coating of an inorganic material over the first coating.

The claimed priority date is 21 May 2004.

PCT (number awaited) Entry into national phase due 21 November 2006

### **OX 040**

A luminescent particle comprising a compound of the formula  $M^2[M^1(POM)]$  wherein  $M^2$  is a cation,  $M^1$  is an ion of a metal capable of providing a luminescent centre and POM is a polyoxyometallate, polyoxythiometallate or polyoxythiometallate of at least one metal of group VA or VIA of the periodic table.

The claimed priority date is 20 August 2002.

EPC	03792498	Pending
Japan	2004-530372	Pending
USA	10/525466	Pending

### **OX 046**

Proprietor is Isis Innovation Ltd, and J A Kemp & Co is informed that Oxonica Materials Limited is exclusive licensee.

A particle has a core and a shell of magnetic nanoparticles around the core. The particles can be prepared by adsorbing an inner shell onto a core, adsorbing magnetic nanoparticles onto the shell, and providing an outer shell around the resulting particle.

The claimed priority date is 29 August 2002.

Australia	2003263292	Pending
EPC	03791049	Pending
Japan	2004-532312	Pending
USA	Number awaited	Pending

### **OX 071**

Handled by Mewburn Ellis LLP. J A Kemp & Co is informed that the proprietor is the University of Strathclyde, and that Oxonica Materials Limited is a non-exclusive licensee.

Target nucleic acids are detected by obtaining a SER(R)S spectrum for a SER(R)S-active complex containing or derived from the target. The complex includes a SER(R)S-active label and optionally a target binding species containing a nucleic acid.

The priority date is 25 July 1995.

EPC	96925873	Pending
Japan	1996-0507358	Pending
USA	6127120	Granted

#### **OX 072**

Handled by Mewburn Ellis LLP. J A Kemp & Co is informed that the proprietor is the University of Strathclyde, and that Oxonica Materials Limited is a non-exclusive licensee.

Target nucleic acids are detected by exposing a sample detecting agent having a colloid metal surface associated with a SER(R)S active species such as an azo dye and with a target binding species which is complementary to the target. SER(R)S is then used to detect any surface enhancement of the label caused by the binding of the binding species to the target sequence.

The priority date is 20 May 1998.

EPC	01080223	Granted
Japan	2000-549763	Pending
USA	09/700732	Allowed, awaiting grant

#### **OX 073**

Handled by Marks and Clerk. J A Kemp & Co is informed that the proprietor is the University of Strathclyde, and that Oxonica Materials Limited is exclusive licensee.

A SERRS active bead for use in identification of a target molecule. The bead comprises aggregated metal colloid and a SERRS active dye encapsulated within a polymer shell.

The priority date is 12 July 2002.

Australia	2003281070	Pending
Canada	2492213	Pending
China	03816607	Pending
EPC	03740789	Pending
India	3117/CHENP/2004	Pending
Japan	2004-520851	Pending
Singapore	200500114	Pending
USA	10/507717	Pending

#### **OX 074**

Handled by Mewburn Ellis. J A Kemp & Co are informed that the proprietor is the University of Strathclyde, and that Oxonica Materials Limited is exclusive licensee.

Detection or identification of particular nucleic acids using modified molecular beacons.

The priority date is 26 August 2003.

PCT GB/2004/003671 Entry into national phase due 26 February 2006.

### **NEW PRODUCT DEVELOPMENT**

#### **OX 001**

Proprietor is Isis Innovation Ltd. J A Kemp & Co is informed that Oxonica Materials Limited is exclusive licensee.

A compound of the formula  $Z_2O_3;Z^{x+}$  where Z is a rare earth metal and x is from 2 to 4, and nanoparticles thereof.

The priority date is 9 February 1998.

EPC	99904997	Pending	
Japan	2000-535587	Pending	Particle size 10nm or less
USA	6596194	Granted	Particle size 10nm or less

### **OX 003**

Handled by Stevens, Hewlett and Perkins. J A Kemp & Co is informed that the proprietor is Isis Innovation Ltd, and that Oxonica Materials Limited is exclusive licensee.

Light emitter comprising a substrate having an upper quantum particle layer containing semiconductor quantum particles that are electroluminescent on application of a biasing voltage; and first and second at least partially transparent contacts. A hole transporter is provided between the upper quantum particle layer of the semiconductor material and the first contact, wherein the hole transporter at least partially intermixes with the upper quantum particle layer, preferably to a depth of up to 100nm.

No earlier priority dates were claimed. The priority date of each case is therefore its own filing date.

EPC	98305324	Pending	Filed 3 July 1998
Japan	1999-0190811	Pending	Filed 5 July 1999
USA	6265823	Granted	Filed 14 July 1998

### **OX 004**

Proprietor is Isis Innovation Ltd. J A Kemp & Co is informed that Oxonica Materials Limited is exclusive licensee.

A process for preparing phosphor particles of formula  $Z_zX_xO_y$ ;RE where Z is a metal of valency b, X is a metal or metalloid of valency a such that  $2y=b.z + a.x$ , and RE is a dopant ion of terbium, europium, cerium, thulium, samarium, holmium, erbium, dysprosium, praseodymium, manganese, chromium or titanium having a size not exceeding one micron. The process comprises preparing an aqueous solution of salts of Z, X and RE and a water-soluble compound that decomposes under the reaction conditions to convert the salts to hydroxycarbonate, heating the solution to cause the decomposition, recovering the resulting precipitate, and calcining at a temperature at least 500 degrees centigrade.

The claimed priority dates are 17 December 1998 and 20 May 1999.

Japan	2000-588304	Pending
USA	6706210	Granted

### **OX 005**

Proprietor is Isis Innovation Ltd, and Oxonica Materials Limited is exclusive licensee.

Substantially monocrystalline particles having the formula  $Z_zO_y$ :RE, where Z is a metal of valency a such that  $2y=a.z$  and RE is a dopant ion of a rare earth metal or manganese. Also specific processes for preparing phosphor particles from aqueous solution.

The claimed priority dates are 17 December 1998 and 20 May 1999.

EPC	99962349	Pending, but decision made to abandon
Japan	2000-588303	Pending
USA	6783855	Granted

### **OX 026**

Compounds that are excited in the near UV, of formula  $X(YO_4)_3$  where X represents one or more rare earth metals such that the total number of rare earth atoms represents a third of the number of  $YO_4$  ions, and Y represents tungsten, molybdenum, niobium or tantalum. The compound is prepared by reacting ions of X with  $YO_4$  ions in solution, and recovering the resulting precipitate.

The claimed priority date is 22 August 2001.

EPC	02751447	Pending
Japan	2003-523564	Pending
Korea	7002568/2004	Pending
USA	10/487314	Pending

### **OX 076**

Handled in-house by Johnson Matthey. J A Kemp & Co is informed that the proprietor is Oxonica Materials Limited, and that the case was filed as part of Johnson Matthey/DTI collaboration.

A deposition process which is suitable for depositing metal compound thin films, such as films of transparent conducting oxides, onto a substrate, comprises feeding a decomposable metal-polymer composition to a nebuliser with a carrier gas, to form an aerosol. The aerosol is contacted with a substrate, which is heated to or above the decomposition temperature of the polymer causing metal to be deposited on the substrate, and simultaneously or subsequently the metal is converted into the desired metal compound.

The current case is an initial filing dated 29 July 2004 from which any later cases will claim priority.

UK	0416859	Further filings due 29 July 2005.
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### **Third Party Patent**

J A Kemp & Co was asked by Oxonica Materials Limited to consider the relevance of a third party patent in force in the UK that had come to the attention of Oxonica Materials Limited in connection with its sunscreen technology. The opinion drawn up by J A Kemp & Co concluded that, based on information received from Oxonica Materials Limited, a finding by a UK court of patent infringement by Oxonica Materials Limited would be unlikely. That opinion does not in any way guarantee that a claim for infringement would not be brought against Oxonica Materials Limited, not that such a claim would not be successful.

### **Oxonica's trade mark portfolio (statutory registrations and applications therefor)**

For each mark is given the country/region, the application number, the filing date, the status and the classes in respect of which the application is made or the mark registered.

#### **Oxonica**

CTM (1)	2350619	16 Aug 01	Registered (01, 03, 09)
CTM (2)	4363875	9 Mar 05	Pending (01, 02, 03, 04, 05, 09, 10, 17, 42)
Japan	4605764	20 Aug 01	Registered (01, 02, 03, 09)
UK	2261947	20 Feb 01	Registered (01, 03, 09)
UK (2)	2386453	9 Mar 05	Pending (01, 02, 03, 04, 05, 09, 10, 17, 42)
USA	76/300915	17 Aug 01	Pending (01, 02, 03, 09)

#### **Envirox**

Australia	WO819446	17 Oct 03	Pending (01, 04)
China	WO819446	17 Oct 03	Pending (01, 04)
CTM	3323946	19 Aug 03	Pending (01, 04)
Hong Kong	300016659	10 May 03	Registered (01, 04)
India(1)	1228827	26 Aug 03	Pending (01)
India(2)	1228828	26 Aug 03	Pending (04)
Japan	WO819446	17 Oct 03	Registered (01, 04)
Korea	WO819446	17 Oct 03	Pending (01, 04)
Malaysia (1)	2003-11059	28 Aug 03	Pending (01)

**Envirox***continued*

Malaysia (2)	2003-11060	28 Aug 03	Pending (04)
New Zealand	725778	25 Feb 05	Pending (01, 04)
Philippines	4-2003-08263	8 Sep 03	Pending (01, 04)
Singapore	WO819446	17 Oct 03	Pending (01, 04)
S. Africa (1)	2005/03687	25 Feb 05	Pending (01)
S. Africa (2)	2005/03688	25 Feb 05	Pending (04)
UK	2306310	25 Jul 02	Registered (01, 04)
USA	78/324219	6 Nov 03	Pending (01, 04)

**Optisol**

Australia	Awaiting no.		Pending (01, 02, 03, 05)
China (1)	4482981	26 Jan 05	Pending (01)
China (2)	4482980	26 Jan 05	Pending (02)
China (3)	4482976	26 Jan 05	Pending (03)
China (4)	4482979	26 Jan 05	Pending (05)
CTM	4235123	6 Jan 05	Pending (01, 02, 03, 05)
Hong Kong	Awaiting no.		Pending (01, 02, 03, 05)
Japan	2005-002188	14 Jan 05	Pending (01, 02, 03)
Korea	51628/2004	16 Nov 04	Pending (01, 02, 03, 05)
Singapore (1)	T05/02322D	14 Feb 05	Pending (01)
Singapore (2)	T05/02323B	24 Feb 05	Pending (02)
Singapore (3)	T05/02327E	24 Feb 05	Pending (03)
Singapore (4)	T05/02328C	24 Feb 05	Pending (05)
Switzerland	00980/2005	12 April 05	Pending (01, 02, 03, 05)
Taiwan	094016555	11 April 05	Pending (01, 02, 03, 05)
Thailand (1)	591412	26 May 05	Pending (01)
Thailand (2)	591412	26 May 05	Pending (02)
Thailand (3)	591412	26 May 05	Pending (03)
Thailand (4)	591412	26 May 05	Pending (05)
UK	2324811	25 Feb 03	Pending (01, 02, 03, 05)
USA	78/559569	3 Feb 05	Pending (01, 02, 03, 05)

**Cerulean**

CTM	3323938	19 Aug 03	Pending (01, 04)
UK	2324307	20 Feb 03	Registered (01, 04)

**Cerulean logo**

CTM	3728722	17 Mar 04	Pending (01, 04)
UK (series of 2)	2344088	29 Sep 03	Registered (01, 04)

**Serrplex**

UK	2373600	22 Sep 04	Pending (01, 05, 09, 10, 42)
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**Serrcode**

UK	2383076	28 Jan 05	Pending (01, 05, 09, 10, 42)
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Yours faithfully

**J A KEMP & CO**

## PART IV (continued)

### Patent agent's report

Set out below is the text of a report received from Kilburn & Strode:

**Kilburn  
& Strode**

European Patent Attorneys  
Chartered Patent Attorneys  
Trade Mark Attorneys

20 Red Lion Street  
London WC1R 4PJ  
Tel: +44 (0)20-7539 4200  
Fax: +44 (0)20-7539 4299  
Email: ks@kstrode.co.uk  
Website: www.kstrode.co.uk

The Board of Directors  
Oxonica plc  
Begbroke Science Park  
Sandy Lane  
Yarnton  
Kidlington  
Oxfordshire OX5 1PF  
AND

Panmure Gordon (UK) Limited\*  
Moorgate Hall  
155 Moorgate  
London EC2M 6XB

(\*solely in its capacity as Nominated Adviser under the AIM Rules of the London Stock Exchange plc in respect of the admission to trading on AIM of Oxonica plc)

Dear Sirs

14 July 2005

#### **Subject: Oxonica plc Admission to trading on AIM**

#### **Matters Relating to Third Party Patents**

We have received a request from Oxonica plc to prepare a Report as follows in respect of certain third party patent matters that Oxonica Materials Limited (formerly Oxonica Limited) and Oxonica Energy Limited, wholly owned subsidiaries of Oxonica plc or where the context requires in relation to the period prior to 16 June 2005, Oxonica Materials Limited and its subsidiaries ("Oxonica") has become aware of during the course of its business activities. The present letter is therefore in reply to that request and constitutes the Report required.

This Report sets out the position as currently understood with respect to the Company and its activities and where an opinion has been sought from Kilburn & Strode. The Report comprises the following sections:

1. Introduction
2. Extent of opinion
3. Third party patent rights
4. Fuels product "Envirox"
5. UV Absorbers or "Sunscreen" technology
6. Biodiagnostics or "SERRS" technology
7. Summary

#### **1. Introduction**

Kilburn & Strode is a long established firm of Chartered Patent Attorneys, European Patent Attorneys and European Trade Mark Attorneys. The firm acts for clients in all areas of intellectual property and has a large client base in the United Kingdom, Europe and overseas with a particular emphasis on high technology sectors such as information technology, electronics, chemistry, biotechnology and pharmaceuticals.

We are therefore able to provide opinions in relation to patent matters in the United Kingdom or with respect to patents granted by or pending applications before the European Patent Office (EPO), where such patents or patent applications have effect in the United Kingdom.

## **2. Extent of opinion**

Kilburn & Strode have been retained by Oxonica to provide opinions and advice in relation to certain specific third party patent matters. This Report should be read in conjunction with the letter provided by one of Oxonica's other advisors, J. A. Kemp & Co with respect to the basic details of the patent system.

Kilburn & Strode have not been asked to carry out or to commission any searches for the existence of third party patent rights relevant to the technologies described above as "Envirox", "Sunscreen" or "SERRS".

Oxonica has sought opinions from Kilburn & Strode with respect to Oxonica's freedom to operate in the United Kingdom only in light of the particular patent documents in question. Kilburn & Strode has therefore not provided a full opinion on freedom to operate within the United Kingdom, but has instead provided opinions on individual patent documents where requested and where the patent in question is in force according to the Register of Patents at the UK Patent Office. For a patent to be in force in the UK, annual renewal fee payments must be made.

Regardless of the searches or enquiries carried out to date by Oxonica, or yet to be performed, the existence of further relevant documents cannot be ruled out since any search is wholly dependent on the search terms used and the search strategy employed.

As far as we are aware Oxonica has not received any notifications of actual or potential patent infringement from any third parties in respect of activities related to the technologies described above as "Envirox", "Sunscreen" or "SERRS".

## **3. Third party patent rights**

Third party patent rights are the granted patents or pending patent applications owned by third parties that could be relevant to the commercial activities of Oxonica. Only the claims of a granted patent can be enforced in the courts. Patent rights are national property rights and advice on freedom to operate in any particular jurisdiction therefore has to be sought from suitably qualified patent lawyers in the country concerned.

## **4. Fuels product "Envirox"**

Kilburn & Strode were asked by Oxonica to consider the possible relevance of certain third party patents that were in force in the United Kingdom and which had come to the attention of the Company. The opinions drawn up by Kilburn & Strode concluded that based on the information and experimental test evidence provided by Oxonica that a finding of patent infringement by a court of the United Kingdom would be unlikely. The opinions were based on the product specification for "Envirox" provided by Oxonica. The opinions did not consider the question of the validity of the patents in question.

As far as we are aware Oxonica has not received any notifications of actual or potential patent infringement from any third parties in respect of "Envirox" which is now on the market in the United Kingdom.

## **5. UV Absorber or "Sunscreen" technology**

An opinion was sought from Kilburn & Strode with regard to a patent having effect in the UK which was identified by Oxonica.

Based on experimental results and scientific advice provided by Oxonica, the opinion concluded that a finding of patent infringement by a court of the United Kingdom would be unlikely. The opinion did not consider the question of the validity of the patent in question.

## **6. Biodiagnostics or “SERRS” technology**

Oxonica is understood to have commissioned searches with respect to the commercialisation of the biodiagnostics technology “SERRS”. Although, no product specifications have yet been prepared, it is understood that the basic concept of the biodiagnostics technology has been considered in such searches.

The searches have identified some pending third party patent applications and granted third party patents that could potentially be considered as being relevant to this technology.

With respect to the pending third party patent applications, it is too early to state whether such applications will mature into granted third party patents that could be relevant to the actions of the company.

With respect to the granted third party patents, the patent documents have been reviewed for their technical content and considered from a legal perspective, although no final opinions have been written. The process of evaluation is at a preliminary stage and work is on-going.

## **7. Summary**

The above information is believed to be a true and accurate reflection of the actions of Oxonica in connection with third party patent matters as we understand the situation and of the work carried out by Kilburn & Strode on instructions from Oxonica.

Yours faithfully

**Kilburn & Strode**

## PART V

### Accountants' reports on the Oxonica Group

Accountants' report on Oxonica plc for the period from incorporation to 24 June 2005:



**KPMG LLP**

Arlington Business Park  
Theale  
Reading RG7 4SD  
United Kingdom

The Directors  
Oxonica plc  
Begbroke Science Park  
Sandy Lane, Yarnton  
Kidlington  
Oxford  
OX5 1PF  
  
Panmure Gordon (UK) Limited  
Moorgate Hall  
155 Moorgate  
London EC2M 6XB

14 July 2005

Dear Sirs

**Oxonica plc**

We report on the financial information set out below. This financial information has been prepared for inclusion in the Admission Document dated 14 July 2005 of Oxonica plc ('the Company').

*Basis of preparation*

The financial information set out in paragraphs 1 to 2 is based on the financial statements of Oxonica plc (the 'Company') from incorporation to 24 June 2005 to which no adjustments were considered necessary.

*Responsibility*

Such financial statements are the responsibility of the directors of the Company.

The directors of the Company are responsible for the contents of the Admission Document dated 14 July 2005 in which this report is included.

It is our responsibility to compile the financial information set out in our report from the financial statements, to form an opinion on the financial information and to report our opinion to you.

*Basis of opinion*

We conducted our work in accordance with the Statements of Investment Circular Reporting Standards issued by the Auditing Practices Board of the United Kingdom. Our work included an assessment of evidence relevant to the amounts and disclosures in the financial information. It also included an assessment of significant estimates and judgements made by those responsible for the preparation of the financial statements underlying the financial information and whether the accounting policies are appropriate to the entity's circumstances, consistently applied and adequately disclosed.

We planned and performed our work so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the financial information is free from material misstatement whether caused by fraud or other irregularity or error.

### *Opinion*

In our opinion the financial information gives, for the purposes of the Admission Document dated 14 July 2005, a true and fair view of the state of affairs of the Company at the date stated.

## **1. Balance sheet**

### **Company balance sheet**

	<i>Notes</i>	<i>24 June 2005 £</i>
Investments	2.1	251,042.24
Cash	2.1	0.20
<b>Net assets</b>		<u>251,042.44</u>
<b>Aggregate shareholders' funds</b>	2.3	<u>251,042.44</u>

## **2. Notes to the financial statements**

2.1 The Company was incorporated on 14 February 2005 under the original name of Hamsard 2803 Plc. It subsequently changed its name to Oxonica plc on 16 June 2005 and became incorporated under that name. The Company is incorporated as a holding company and will not trade, no audited financial statements have been made up and no dividends have been declared or paid since the date of incorporation.

On 13 June 2005, the two ordinary subscriber shares held in Hamsard 2803 Plc were transferred. One ordinary share was transferred from Hammonds Secretaries Ltd to Richard John George Clarke, the other from Hammonds Directors Ltd to Kevin Roger Kenneth Matthews. These shares are fully paid up at a nominal value of £0.10.

At the date of its incorporation, the authorised share capital of the Company was £50,000,000 divided into 500,000,000 ordinary shares of £0.10 each,

On 15 June 2005, the Shareholders passed a resolution of the Company to:

- (a) reduce the authorised share capital of the Company from £50,000,000 to £1,140,000 by the cancellation of 488,600,000 ordinary shares of £0.10 each comprised in the authorised but as yet unissued share capital of the Company;
- (b) sub-divide the authorised but unissued share capital currently of 11,399,998 ordinary shares of £0.10 each into 113,999,980 ordinary shares of £0.01 each;
- (c) sub-divide each of the two subscriber shares of £0.10 each currently in issue into 10 ordinary shares of £0.01 each; and
- (d) reclassify 2,299,000 of the authorised but unissued ordinary shares of £0.01 each as 2,299,000 "B" ordinary Shares of £0.01 each and 3,376,072 of the authorised but unissued ordinary shares of £0.01 each as 3,376,072 "D" ordinary shares of £0.01 each.

On 16 June 2005, the Shareholders passed a resolution to:

- (a) reclassify 2,299,000 "B" ordinary shares of £0.01 each as 2,299,000 ordinary shares of £0.01 each and 3,376,072 "D" ordinary shares of £0.01 as 3,376,072 ordinary shares of £0.01 each; and
- (b) increase the authorised share capital of the Company from £1,140,000 to £5,000,000 by the creation of 386,000,000 ordinary shares of £0.01 each.

On the 21 June 2005, a share for share transaction took place with the shareholders of Oxonica Materials Limited (formerly Oxonica Limited), such that Oxonica plc now owns 100 per cent. of that company. The total investment was £251,042.24 with shares issued at their nominal value of £0.01.

The year end of Oxonica plc is 31 December, with the first financial statements being prepared for the year ended 31 December 2005.

## 2.2 *Basis of preparation*

The financial information has been prepared under the historical cost convention and in accordance with applicable accounting standards.

## 2.3 *Share capital*

	<i>At 24 June 2005</i>
<i>Authorised</i>	
500,000,000 ordinary shares of £0.01	£5,000,000
<i>Allotted and called up</i>	
25,104,244 ordinary shares of £0.01 each	£251,042

## 2.4 *Related Parties*

The following executive directors own shares in Oxonica plc:

Christopher Moore:	100,168 shares
Dr Kevin Matthews:	46,968 shares
Richard Clarke:	5,548 shares

Charles Eld is a director of Seighford Investment Company Limited which holds 915,876 shares.

## 2.5 *Post balance sheet events*

On the 16 June 2005 Oxonica plc guaranteed the shareholder loans totalling £2,199,932 held in Oxonica Materials Limited.

On 5 July 2005 Stagecoach Bus Holdings Limited also elected to exercise their first option in accordance with the option agreements dated 22 September 2004 and 5 July 2005, summarised at paragraphs 9(f) and 9(g) respectively of Part VI of the Admission Document. Under this option 991,644 ordinary shares with a nominal value of £0.01 have been issued by Oxonica plc.

On admission the shareholder loans held in Oxonica Materials Limited will either be converted to Oxonica plc ordinary shares or repaid in cash, dependent upon the discretion of the shareholder who made the loan.

The total converted to equity will be £1,964,518 with the remaining balance of £235,414 being repaid in cash.

On admission Oxonica plc will receive an additional £8.3 million in exchange for issuing ordinary shares at a nominal value of £0.01 to both existing and new investors.

Yours faithfully

KPMG LLP



**KPMG LLP**  
Arlington Business Park  
Theale  
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The Directors  
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Panmure Gordon (UK) Limited  
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14 July 2005

Dear Sirs

**Oxonica Materials Limited (formerly Oxonica Limited)**

We report on the financial information set out in paragraphs 1 to 4. This financial information has been prepared for inclusion in the Admission Document dated 14 July 2005 of Oxonica plc.

*Basis of preparation*

The financial information set out in paragraphs 1 to 4 is based on the audited consolidated financial statements of Oxonica Materials Limited for the period from 1 January 2002 to 31 December 2004 prepared on the basis described in note 4.1 after making such adjustments as we consider necessary.

*Responsibility*

The financial statements are the responsibility of the Directors of Oxonica Materials Limited respectively who approved their issue.

The Directors of Oxonica plc are responsible for the contents of the Admission Document dated 14 July 2005 in which this report is included.

It is our responsibility to compile the financial information set out in our report from the audited consolidated financial statements, to form an opinion on the financial information and to report our opinion to you.

*Basis of opinion*

We conducted our work in accordance with the Statements of Investment Circular Reporting Standards issued by the Auditing Practices Board of the United Kingdom. Our work included an assessment of evidence relevant to the amounts and disclosures in the financial information. The evidence included that recorded by the auditors who audited the financial statements underlying the financial information. It also included an assessment of significant estimates and judgements made by those responsible for the preparation of the financial statements underlying the financial information and whether the accounting policies are appropriate to the entity's circumstances, consistently applied and adequately disclosed.

We planned and performed our work so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the financial information is free from material misstatement whether caused by fraud or other irregularity or error.

*Opinion*

In our opinion the financial information gives, for the purposes of the Admission Document dated 14 July 2005, a true and fair view of the state of affairs of Oxonica Materials Limited as at the dates stated and of its consolidated losses and cash flows for the years then ended.

## 1. Consolidated profit and loss account

	Notes	For the years ended 31 December		
		2002 £	2003 £	2004 £
<b>Turnover</b>		118,319	209,905	390,525
Cost of sales		(7,553)	(116,291)	(108,853)
Gross (loss)/profit		110,766	93,614	281,672
Administrative expenses		(2,245,697)	(2,726,589)	(3,664,011)
Other operating income		32,636	—	174,772
<b>Operating loss</b>	4.4	(2,102,295)	(2,632,975)	(3,207,567)
Interest received		21,311	36,934	63,403
Interest payable and similar charges	4.5	(38,522)	(109,175)	(147,774)
Operating loss before depreciation, amortisation and interest		(2,019,558)	(2,485,946)	(2,990,968)
Depreciation and amortisation		(82,737)	(147,029)	(216,599)
Net interest (payable)/receivable		(17,211)	(72,241)	(84,371)
<b>Loss on ordinary activities before taxation</b>		(2,119,506)	(2,705,216)	(3,291,938)
Tax credit on loss on ordinary activities	4.6	125,000	83,389	130,767
<b>Loss on ordinary activities after taxation</b>		(1,994,506)	(2,621,827)	(3,161,171)
<b>Retained loss for the financial year</b>	4.12	(1,994,506)	(2,621,827)	(3,161,171)

There are no recognised gains or losses other than the loss for the financial year. Accordingly, no statement of total recognised gains and losses is given.

## 2. Consolidated balance sheet

	Notes	As at 31 December		
		2002 £	2003 £	2004 £
<b>Fixed assets</b>				
Intangible assets		118,750	222,917	197,917
Tangible assets	4.7	312,457	296,641	568,519
<b>Current assets</b>				
Stocks		—	128,820	158,815
Debtors	4.9	279,497	226,206	501,592
Cash at bank and in hand		2,583,567	33,454	600,184
<b>Creditors:</b> amounts falling due within one year	4.10	(801,069)	(1,088,474)	(1,320,120)
<b>Net current assets/(liabilities)</b>		2,061,995	(699,994)	(59,529)
<b>Total assets less current liabilities</b>		2,493,202	(180,436)	706,907
<b>Creditors:</b> amounts falling due after more than one year	4.11	(2,419,735)	(2,357,712)	(2,481,378)
		73,467	(2,538,148)	(1,774,471)
<b>Aggregate shareholders' funds</b>	4.12	73,467	(2,538,148)	(1,774,471)

### 3. Consolidated cash flow statement

		<i>For the year ended 31 December</i>		
		2002	2003	2004
Notes		£	£	£
	<b>Cash outflow from operating activities</b>	4.14 (1,532,427)	(2,281,661)	(3,344,655)
	<b>Returns on investments and servicing of finance</b>			
	Interest paid	(11,451)	(75,621)	(124,655)
	Interest received	21,311	36,934	63,403
	Interest element of hire purchase payments	(27,071)	(33,554)	(23,119)
	<b>Net cash outflow from returns on investments and servicing of finance</b>	(17,211)	(72,241)	(84,371)
	<b>Taxation</b>	31,789	99,800	108,586
	<b>Capital expenditure and financial investment</b>			
	Purchase of tangible fixed assets	(262,268)	(110,380)	(470,267)
	Purchase of intangible fixed assets	(125,000)	(125,000)	—
	<b>Net cash outflow on capital expenditure and financial investment</b>	(387,268)	(235,380)	(470,267)
	<b>Cash outflow before use of liquid resources and financing</b>	(1,905,117)	(2,489,482)	(3,790,707)
	<b>Financing</b>			
	Movement in finance leases	103,200	(70,843)	195,416
	New loans advanced	2,299,932	—	250,000
	Repayment of loans	—	—	(12,826)
	Issue of ordinary share capital	2,049,818	10,212	3,990,912
	Legal costs charged to share premium account	—	—	(66,065)
	<b>Net cash inflow from financing</b>	4,452,950	(60,631)	4,357,437
	<b>Increase/(decrease) in cash in the year</b>	<u>2,547,833</u>	<u>(2,550,113)</u>	<u>566,730</u>
	<b>Reconciliation of net cash flow to movement in net debt</b>			
	Increase/(decrease) in cash in the year	2,547,833	(2,550,113)	566,730
	Cash inflow from increase in debt	(2,164,220)	195,336	(150,589)
	Change in net debt resulting from cash flows	383,613	(2,354,777)	416,141
	Other non-cash movements	(238,912)	(124,493)	(282,000)
		144,701	(2,479,270)	134,141
	Net debt at 8 November/1 January	(75,845)	68,856	(2,410,414)
	<b>Net debt at 31 December</b>	4.15 <u>68,856</u>	<u>(2,410,414)</u>	<u>(2,276,273)</u>

## **4. Notes to the financial statements**

### *4.1 Basis of preparation*

The financial information is based on the audited consolidated financial statements of Oxonica Materials Limited for the years ended 31 December 2002, 2003 and 2004. The financial information has been drawn up in accordance with applicable accounting standards.

The financial statements are prepared under the historical cost convention.

Grant Thornton, of Westminster Way, Oxford were the auditors of Oxonica Materials Limited throughout the the years ended 31 December 2002 and 2003, and KPMG LLP, of Arlington Business Park, Theale were the auditors of Oxonica Materials Limited for the year ended 31 December 2004.

### *4.2 Accounting policies*

The principal accounting policies, which have been applied consistently throughout the period, are set out below.

#### *Turnover*

Turnover is the total amount receivable by the group for goods supplied and services provided, excluding VAT.

#### *Amortisation*

Licenses are included at cost and amortised over their useful economic life of 10 years.

#### *Research and development*

Research and development expenditure is written off in the year in which it is incurred.

#### *Tangible fixed assets*

Depreciation of fixed assets is calculated to write off the cost of the assets in equal annual instalments over their estimated useful lives or, if held under a finance lease, over the lease term, whichever is the shorter:

Laboratory equipment	25 per cent.
Leasehold improvements	20 per cent.
Office furniture and equipment	25 per cent.

#### *Taxation*

The charge for taxation is based on the loss for the year and takes into account taxation deferred because of timing differences between the treatment of certain items for taxation and accounting purposes.

Deferred tax is recognised, without discounting, in respect of all timing differences between the treatment of certain items for taxation and accounting purposes which have arisen but not reversed by the balance sheet date, except as otherwise required by FRS 19.

#### *Leases*

Assets acquired under hire purchase contracts or finance leases are capitalised in the balance sheet. Those held under hire purchase contracts are depreciated over their estimated useful lives. Those held under finance leases are depreciated over their estimated useful lives or the lease term, whichever is the shorter.

The interest element of these obligations is charged to the profit and loss account over the relevant period. The capital element of the future payments is treated as a liability.

Operating lease rentals are charged to the profit and loss account on a straight-line basis over the period of the lease.

#### *Pension costs*

The company operates a defined contribution pension scheme. The assets of the scheme are held separately from those of the company in an independently secured fund. Contributions payable for the year are charged in the profit and loss account.

### Stocks

Stocks are valued at the lower of cost and net realisable value, after making due allowance for obsolete and slow moving items.

### Foreign currencies

Assets and liabilities in foreign currencies are translated into sterling at the rates of exchange ruling at the balance sheet date. Transactions in foreign currencies are translated into sterling at the rate of exchange ruling at the date of the transaction. Exchange differences are taken into account in arriving at the operating profit.

### Government grants

Government grants of a revenue nature are credited to the profit and loss account in the same period as related expenditure.

### 4.3 Directors and employees

	2002 £	2003 £	2004 £
(a) <i>Directors' emoluments</i>			
Emoluments (including pension contributions)	<u>303,638</u>	<u>292,110</u>	<u>335,573</u>
Remuneration of the highest paid director	<u>139,120</u>	<u>160,097</u>	<u>164,666</u>
Pension contribution for the highest paid director	<u>4,745</u>	<u>5,750</u>	<u>5,750</u>
Total emoluments of the highest paid director	<u>143,865</u>	<u>165,847</u>	<u>170,416</u>
No. of directors who are members of the defined contribution scheme	<u>4</u>	<u>2</u>	<u>2</u>
	2002	2003	2004
	Number of employees		

### (b) Staff

#### Average number of persons employed

Research and development	6	11	14
Sales and marketing	3	3	6
Finance and administration	4	4	4
Corporate	1	3	4
Total	<u>14</u>	<u>21</u>	<u>28</u>
	£	£	£

#### Staff costs during the year

Wages and salaries	664,649	953,199	1,354,243
Social security costs	70,572	101,167	138,011
Other pension costs	<u>23,846</u>	<u>45,641</u>	<u>35,442</u>
	<u>759,067</u>	<u>1,100,007</u>	<u>1,527,696</u>

### 4.4 Operating loss

	2002 £	2003 £	2004 £
<b>Operating loss is stated after charging:</b>			
Auditors' remuneration			
Audit services	7,000	12,100	12,000
Depreciation of tangible fixed assets			
Owned	10,507	28,216	82,110
Hire purchase	65,980	97,980	109,489
Amortisation	6,250	20,833	25,000
Net loss on foreign currency translation	—	6,010	1,474

#### 4.5 Interest payable and similar charges

	2002 £	2003 £	2004 £
Interest on bank overdraft and loans	11,451	75,621	124,655
Finance charges payable in respect of finance leases and hire purchase contracts	<u>27,071</u>	<u>33,554</u>	<u>23,119</u>
	<u><u>38,522</u></u>	<u><u>109,175</u></u>	<u><u>147,774</u></u>

#### 4.6 Tax charge on loss on ordinary activities

	2002 £	2003 £	2004 £
<b>UK corporation tax</b>			
Corporation tax at 20/19% for each year based on the loss for the year	(125,000)	(83,389)	(130,767)
<b>Deferred tax</b>			
Timing differences, origination and reversal – current year	<u>—</u>	<u>—</u>	<u>—</u>
	<u><u>(125,000)</u></u>	<u><u>(83,389)</u></u>	<u><u>(130,767)</u></u>

#### Factors affecting the future tax charge

Unrelieved tax losses of £582,001 remain available to offset against future taxable trading profits of the same trade subject to the agreement of the Inland Revenue.

	2002 £	2003 £	2004 £
<b>Current tax reconciliation</b>			
Loss on ordinary activities before tax	<u>(2,119,506)</u>	<u>(2,705,216)</u>	<u>(3,291,938)</u>
Loss on ordinary activities multiplied by the small company rate of UK corporation tax of 20%/19	(423,901)	(513,991)	(625,468)
<b>Effects of:</b>			
Expenses disallowed for tax purposes	92,919	56,212	28,863
Excess of depreciation over capital allowances	(36,402)	10,446	14,604
Overseas taxation	—	767	—
Overprovision of R&D tax credit in prior year	—	25,200	—
Unutilised tax losses	367,384	447,333	582,001
Research and development tax credit	(125,000)	(109,356)	(130,767)
Current tax charge/(credit) for the year	<u>—</u>	<u>—</u>	<u>—</u>
	<u><u>(125,000)</u></u>	<u><u>(83,389)</u></u>	<u><u>(130,767)</u></u>

#### Factors which may affect future tax charges

No deferred tax asset has been recognised in respect of the cumulative losses to date, as there is insufficient evidence that the asset will be recoverable, although this will be reassessed each year. This amounts to £1.4 million.

#### 4.7 Tangible fixed assets

Plant and  
machinery  
£

##### Cost

At 1 January 2002	205,940
Year ended 31 December 2002	
Additions	<u>262,268</u>
At 31 December 2002	468,208
Year ended 31 December 2003	
Additions	110,380
Disposals	—
At 31 December 2003	<u>578,588</u>
Year ended 31 December 2004	
Additions	470,267
Disposals	<u>(37,041)</u>
At 31 December 2004	<u><u>1,011,814</u></u>

##### Accumulated depreciation

At 1 January 2002	79,264
Year ended 31 December 2002	
Charge for the period	<u>76,487</u>
At 31 December 2002	155,751
Year ended 31 December 2003	
Charge for the year	126,196
Disposals	—
At 31 December 2003	<u>281,947</u>
Year ended 31 December 2004	
Charge for the year	191,599
Disposals	<u>(30,251)</u>
At 31 December 2004	<u><u>443,295</u></u>

##### Net book value

At 31 December 2002	<u><u>312,457</u></u>
At 31 December 2003	<u><u>296,641</u></u>
At 31 December 2004	<u><u>568,519</u></u>

Included in the total net book value of plant and machinery is £386,376 (2003: £199,780; 2002: £270,128) in respect of assets held under hire purchase contracts. Depreciation for the year on these assets was £109,489 (2003: £97,980; 2002: £65,980).

#### 4.8 Subsidiary undertakings

Subsidiary name	Proportion of Holding shares held	Nature of principal business
Oxonica Energy Limited (formerly Cerulean International Limited)	Ordinary 100%	Research and development on natural sciences and engineering

Registered in England and Wales

##### Acquired in year ended 31 December 2003

Cerulean Asia Pacific Limited	Ordinary 100%	Research and development, sales and marketing of fuel additive products.
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Incorporated in Hong Kong

#### 4.9 Debtors

	2002 £	2003 £	2004 £
<b>Amounts falling due within one year</b>			
Trade debtors	75,308	32,479	112,407
VAT recoverable	20,489	41,731	17,984
Other debtors	25,975	1,258	129,107
Research and development tax credit	125,000	108,589	130,767
Prepayments and accrued income	32,725	42,149	111,327
	<u>279,497</u>	<u>226,206</u>	<u>501,592</u>

#### 4.10 Creditors: amounts falling due within one year

	2002 £	2003 £	2004 £
Bank loans and overdraft	—	7,292	12,500
Other loans	—	—	244,465
Obligations under hire purchase contracts	94,976	78,864	138,114
Trade creditors	320,403	529,691	415,472
Other taxation and social security	53,061	61,878	39,111
Pension contributions	6,803	4,985	—
Other creditors	—	18,213	1,898
Accruals and deferred income	325,826	387,551	468,560
	<u>801,069</u>	<u>1,088,474</u>	<u>1,320,120</u>

#### 4.11 Creditors: amounts falling due after more than one year

	2002 £	2003 £	2004 £
Bank loans	100,000	92,708	80,208
Investor loans	2,199,932	2,199,932	2,199,932
Obligations under hire purchase contracts	119,803	65,072	201,238
	<u>2,419,735</u>	<u>2,357,712</u>	<u>2,481,378</u>

#### Analysis of debt

	2002 £	2003 £	2004 £
Investor loans	2,199,932	2,199,932	2,199,932
Other loans	—	—	244,465
Bank loans	100,000	100,000	92,708
	<u>2,299,932</u>	<u>2,299,932</u>	<u>2,537,105</u>
Bank loans and overdrafts			
Repayable in one year or less or on demand	—	7,292	12,500
Other loans and loan notes			
Repayable in one year or less or on demand	—	—	244,465
Repayable in more than two years but not more than five years	2,299,932	2,292,640	2,280,140
	<u>2,299,932</u>	<u>2,299,932</u>	<u>2,537,105</u>

#### (a) Bank overdraft

The bank loans are secured by a first fixed and floating charge over all the assets of Oxonica Materials. The investor loans are secured by a second fixed and floating charge over all the assets of Oxonica Materials.

(b) *Investor loans*

The investor loans of £2,199,932 are repayable on 2 December 2007, being the 5th anniversary of the initial drawdown, unless certain events take place in which case they may be repayable earlier. The loans are interest bearing at a rate of 7 per cent.

(c) *Hire purchase obligations*

The maturity of obligations under finance leases and hire purchase contracts is as follows:

	2002 £	2003 £	2004 £
Within one year	94,976	78,864	138,114
In the second to fifth years	119,803	65,072	201,238
	<u>214,779</u>	<u>143,936</u>	<u>339,352</u>

4.12 *Aggregate shareholders' funds*

	2002 £	2003 £	2004 £
At 1 January	18,155	73,467	(2,538,148)
Retained loss for the year	(1,994,506)	(2,621,827)	(3,161,171)
Issue of shares	2,049,818	10,212	3,990,912
Legal costs charged to share premium account	—	—	(66,064)
At 31 December	<u>73,467</u>	<u>(2,538,148)</u>	<u>(1,774,471)</u>

4.13 *Commitments*

(a) There were no capital commitments at the year end.

	2002 £	2003 £	2004 £
Contracted	<u>—</u>	<u>—</u>	<u>—</u>

(b) Oxonica Materials Limited was committed to making the following payments during the next year in respect of other operating leases which expire:

	2002 £	2003 £	2004 £
<i>Leases which expire</i>			
Within one year	25,980	—	—
Between one and five years	12,990	106,500	106,500
	<u>38,970</u>	<u>106,500</u>	<u>106,500</u>

4.14 *Reconciliation of operating loss to operating cash flows*

	2002 £	2003 £	2004 £
Operating loss	(2,102,295)	(2,632,975)	(3,207,567)
Depreciation of tangible fixed assets	76,487	126,196	191,599
Amortisation of intangibles	6,250	20,833	25,000
(Increase)/decrease in stock	—	(128,820)	(29,995)
(Increase)/decrease in debtors	18,740	36,880	(253,205)
Increase in creditors	468,391	296,225	(77,277)
Loss on disposal of fixed assets	—	—	6,790
<b>Net cash outflow from operating activities</b>	<u>(1,532,427)</u>	<u>(2,281,661)</u>	<u>(3,344,655)</u>

#### 4.15 Analysis of changes in net debt

	At 1 January 2002 £	Cash flow £	Other non-cash changes £	At 31 December 2002 £
Cash in hand and at bank	35,734	2,547,833	—	2,583,567
Bank overdrafts	—	—	—	—
		<u>2,547,833</u>		
Debt due within one year	—	—	—	—
Debt due after one year	—	(2,299,932)	—	(2,299,932)
Hire purchase liability	(111,579)	135,712	(238,912)	(214,779)
		<u>(2,164,220)</u>		
Net debt	<u>(75,845)</u>	<u>383,613</u>	<u>(238,912)</u>	<u>68,856</u>

	At 1 January 2003 £	Cash flow £	Other non-cash changes £	At 31 December 2003 £
Cash in hand and at bank	2,583,567	(2,550,113)	—	33,454
Bank overdrafts	—	—	—	—
		<u>(2,550,113)</u>		
Debt due within one year	—	—	(7,292)	(7,292)
Debt due after one year	(2,299,932)	—	7,292	(2,292,640)
Hire purchase liability	(214,779)	195,336	(124,493)	(143,936)
		<u>195,336</u>		
Net debt	<u>68,856</u>	<u>(2,354,777)</u>	<u>(124,493)</u>	<u>(2,410,414)</u>

	At 1 January 2004 £	Cash flow £	Other non-cash changes £	At 31 December 2004 £
Cash in hand and at bank	33,454	566,730	—	600,184
Bank overdrafts	—	—	—	—
		<u>566,730</u>		
Debt due within one year	(7,292)	(237,173)	(12,500)	(256,965)
Debt due after one year	(2,292,640)	—	12,500	(2,280,140)
Hire purchase liability	(143,936)	86,584	(282,000)	(339,352)
		<u>(150,589)</u>		
Net debt	<u>(2,410,414)</u>	<u>416,141</u>	<u>(282,000)</u>	<u>(2,276,273)</u>

#### 4.16 Related party disclosures

As at 31 December 2004

Kevin Matthews owned 600 ordinary shares in Oxonica Materials Limited.

Charles Eld is a director of Seighford Investment Company Limited which holds 3,389 'B' Ordinary shares.

Bernard Fairman represents Foresight Technology Partners which holds 1,094 ordinary shares, 1,696 'B' ordinary shares and 5,597 'D' ordinary shares. Foresight Technologies have also made a loan investment of £524,053 in Oxonica Materials Limited. (Bernard Fairman retired as a director of Oxonica Materials Limited on the 17 June 2005).

Legal fees incurred by Foresight Technology Partners in the rights issue were paid by Oxonica Materials Limited totalling £82,000 in 2004.

Christopher Moore is a director of Trivest VCT Plc, which holds 985 ordinary shares, 1,527 'B' ordinary shares and 5,039 'D' ordinary shares in Oxonica Materials Limited and have made a loan investment of £471,511.

#### *4.17 Post balance sheet event*

On the 11 February 2005, Oxonica Materials Limited reorganised its share capital, with all 'B' and 'D' ordinary shares reclassified as ordinary shares accordingly. A rights issue and employee fundraising also occurred, raising £2.6 million and this resulted in total ordinary share capital after the reorganisation and fundraising of £3,303 issued at a nominal value of £0.01.

On the 16 June 2005, the shareholders passed a resolution for Oxonica Materials Limited to change its name to Oxonica Materials Limited.

On the 16 June 2005, the shareholders of Oxonica Materials Limited entered into a share for share exchange with Oxonica plc, such that Oxonica plc now owns 100 per cent. of the ordinary share capital of Oxonica Materials Limited. The total nominal value of ordinary shares issued in Oxonica plc was £251,042.44.

On the 16 June 2005 Oxonica plc guaranteed the shareholder loans totalling £2,199,932 held in Oxonica Materials Limited.

On 5 July 2005 Stagecoach Bus Holdings Limited also elected to exercise their first option in accordance with the option agreements dated 23 September 2004 and 5 July 2005, summarised at paragraphs 9(f) and 9(g) respectively of Part VI of the Admission Document. Under this option 991,644 ordinary shares with a nominal value of £0.01 have been issued by Oxonica plc.

On admission the shareholder loans held in Oxonica Materials Limited will either be converted to Oxonica plc ordinary shares or repaid in cash, dependent upon the discretion of the shareholder who made the loan.

The total converted to equity will be £1,964,518 with the remaining balance of £235,414 being repaid in cash.

Yours faithfully

KPMG LLP

## PART VI

### Additional information

#### 1. Responsibility

The Directors accept responsibility for the information contained in this document. To the best of the knowledge and belief of the Directors (who have taken all reasonable care to ensure that such is the case), the information contained in this document is in accordance with the facts and does not omit anything likely to affect the import of such information.

#### 2. The Company

- 2.1 The Company was incorporated under the Act and registered in England and Wales on 14 February 2005 with registered number 5363273 as a public limited company with the name of Hamsard 2803 plc. On 16 June 2005 the Company changed its name to Oxonica plc. On 17 June 2005 the Company obtained a certificate to commence trading under section 117 of the Act. The liability of the members of the Company is limited.
- 2.2 The registered office and principal place of business of the Company is Unit 7, Begbroke Science Park, Sandy Lane, Yarnton, Kidlington, Oxfordshire OX5 1PF.
- 2.3 The Company's principal objects and activities are to act as a general commercial company. The objects of the Company are set out in full in clause 4 of its Memorandum of Association.
- 2.4 Details of the Group are set out at paragraph 14 below.
- 2.5 The principal legislation under which the Company operates is the Act and regulations made thereunder.
- 2.6 The accounting reference date of the Company is 31 December.

#### 3. Share capital of the Company

- 3.1 The authorised and issued share capital of the Company at the date of this document and as it will be following Admission is as follows:

	<i>Existing</i>		<i>Following Admission</i>	
	<i>Number of Ordinary Shares</i>	<i>Nominal Value £</i>	<i>Number of Ordinary Shares</i>	<i>Nominal Value £</i>
Authorised share capital	500,000,000	5,000,000	500,000,000	5,000,000
Issued and fully paid up share capital	25,104,244	251,042.44	36,805,329	368,053.29

- 3.2 At the date of its incorporation, the authorised share capital of the Company was £50,000,000 divided into 500,000,000 ordinary shares of £0.10 each, of which two subscriber shares were in issue, fully paid.
- 3.3 On 13 June 2005 a subscriber share was transferred to each of Kevin Matthews and Richard Clarke.
- 3.4 On 15 June 2005, the Shareholders passed a resolution of the Company to:
- reduce the authorised share capital of the Company from £50,000,000 to £1,140,000 by the cancellation of 488,600,000 ordinary shares of 10p each comprised in the authorised but as yet unissued share capital of the Company;
  - sub-divide the authorised but unissued share capital currently of 11,399,998 ordinary shares of 10p each into 113,999,980 ordinary shares of 1p each;
  - sub-divide each of the two subscriber shares of 10p each currently in issue into 10 ordinary shares of 1p each; and
  - reclassify 2,299,000 of the authorised but unissued ordinary shares of 1p each as 2,299,000 "B" ordinary Shares of 1p each and 3,376,072 of the authorised but unissued ordinary shares of 1p each as 3,376,072 "D" ordinary shares of 1p each.

3.5 On 16 June 2005, the Shareholders passed a resolution to:

- (a) reclassify 2,299,000 "B" ordinary shares of 1p each as 2,299,000 ordinary shares of 1p each and 3,376,072 "D" ordinary shares of £0.01 as 3,376,072 ordinary shares of 1p each; and
- (b) increase the authorised share capital of the Company from £1,140,000 to £5,000,000 by the creation of 386,000,000 ordinary shares of £0.01 each.

3.6 On 12 July 2005, the Shareholders passed resolutions of the Company to:

- (a) generally and unconditionally authorise the Directors to exercise all or any powers of the Company to allot, grant options over, offer or otherwise deal with or dispose of any relevant securities (as defined in section 80(2) of the Companies Act 1985 (the "**Act**")), in the capital of the Company pursuant to section 80 of the Act, conditional on the Admission and in substitution for all previous authorities
  - (i) up to a maximum nominal amount of £115,000 in connection with the issue and allotment of up to 11,500,000 ordinary shares of £0.01 each in the capital of the Company pursuant to the Placing, such authority to expire on 15 July 2005;
  - (ii) following the expiry of the authority to allot granted pursuant to sub-paragraph (i) above up to a maximum of 11,845,000 ordinary shares of £0.01 each, being approximately one third of the estimated ordinary share capital following Admission provided that this authority shall expire on the day falling 15 months after the date of the passing of this resolution or, if earlier, at the conclusion of the annual general meeting of the Company to be held in 2006;
  - (iii) in addition to the authority to allot granted pursuant to sub-paragraph (i) above, up to a maximum of 37,392 ordinary shares of £0.01 each by the entry of and pursuant to an option agreement between the Company and First Capital Corporation Limited dated 7 July 2005, such authority to expire on 15 July 2005;
  - (iv) in addition to the authority to allot granted pursuant to sub-paragraph (i) above, up to a maximum of 128,972 ordinary shares of £0.01 each by the entry of and pursuant to an option agreement to be entered into between the Company and Trivest VCT plc, such authority to expire on 15 July 2005;
  - (v) in addition to the authority to allot granted pursuant to sub-paragraph (i) above, up to a maximum of 35,264 ordinary shares of £0.01 each by the entry of and pursuant to option agreements entered into between the Company and each of Simon Jones and Mark Green provided that this authority shall expire on 15 July 2005;
  - (vi) in addition to the authority to allot granted pursuant to sub-paragraph (i) above, up to a maximum of 991,644 ordinary shares of £0.01 each by the entry of and pursuant to an option agreement entered into between the Company, Stagecoach Bus Holdings Limited, Oxonica Materials and Oxonica Energy dated 5 July 2005, such authority to expire on 15 July 2005;

save that the Company may make an offer or agreement before the expiry of this authority which would or might require relevant securities to be allotted after such expiry and the Directors may allot relevant securities pursuant to such an offer or agreement as if the authority conferred hereby had not expired.

- (b) empower the Directors, subject to and conditional on Admission, in substitution for all previous authorities and pursuant to the provisions of section 95 of the Act, to allot, grant options over, offer or otherwise deal with or dispose of equity securities (as defined in section 94(2) of the Act) for cash as if section 89(1) of the Act did not apply to any such allotment, grant of options, offer, dealing or disposal, provided that this power shall be limited to:

- (i) up to an aggregate nominal amount of £115,000 in connection with the allotment of up to 11,500,000 ordinary shares of £0.01 each in the capital of the Company pursuant to the Placing and Admission;
- (ii) up to an aggregate nominal amount of £11,932.72 by the granting of options over 1,193,272 ordinary shares of £0.01 each granted to Simon Jones, Mark Green, Trivest VCT plc, First Capital Corporation Limited and Stagecoach Bus Holdings Limited;
- (iii) the allotment of equity securities otherwise than pursuant to sub-paragraphs (i) and (ii) above, in connection with any issue by way of rights or other offer where the number of equity securities to be allotted to holders of ordinary shares of the Company on a fixed record date is proportionate (as nearly as may be) to the number of ordinary shares then held by such shareholders, subject to such exclusions or other arrangements as the Directors may deem necessary or expedient to deal with legal or practical problems under the laws of, or the requirements of, any regulatory or stock exchange authority in any jurisdiction or in relation to fractional entitlements; and
- (iv) otherwise than pursuant to sub-paragraphs (i) to (iii) inclusive above, other allotments of equity securities for cash up to an aggregate nominal amount of 20 per cent. of the nominal value of the issued share capital of the Company on the date of, but immediately following, the Placing and Admission,

provided that this power shall, unless it is (prior to its expiry) duly revoked or varied or renewed by the Company in general meeting, expire on the day falling 15 months after the date of the passing of this resolution or, if earlier, at the conclusion of the annual general meeting of the Company to be held in 2006, save that the Company may make an offer or agreement before the expiry of this power which would or might require equity securities to be allotted after such expiry and the Directors may allot equity securities pursuant to such an offer or agreement as if the power conferred hereby had not expired.

- (c) THAT the shareholders of the Company waive all rights of pre-emption in respect of and otherwise approve the transfer of 106,096 Ordinary Shares registered in the name of NGEN Enabling Technology Fund LP to Seighford Investment Company Limited.

3.7 On Admission, the Company will issue and allot the Placing Shares.

3.8 Save as referred to in this document:

- (a) no share or loan capital of the Company or any subsidiary is under option or has been agreed, conditionally or unconditionally, to be put under option;
- (b) no persons have preferential subscription rights in respect of any authorised but unissued share or loan capital of the Company or any subsidiary; and
- (c) other than pursuant to the Placing or pursuant to the exercise of outstanding share options there is no present intention to issue any of the authorised but unissued share capital of the Company.

3.9 The existing issued Ordinary Shares are, and the Placing Shares will be, in registered form and may be held in either certificated or uncertificated form. CREST is a paperless settlement procedure enabling securities to be evidenced otherwise than by certificates and transferred otherwise than by written instrument. The Articles of Association of the Company permit the holding of Ordinary Shares under the CREST system. Accordingly, it is intended that following Admission settlement of transactions in the Ordinary Shares from Admission may take place within the CREST system if the relevant shareholders so wish.

- 3.10 Otherwise than pursuant to the Placing, none of the Ordinary Shares have been sold or are available in whole or in part to the public in conjunction with the application for the existing Ordinary Shares and the Placing Shares to be admitted to AIM.
- 3.11 There are no listed or unlisted securities issued by the Company not representing share capital.
- 3.12 Other than the current application for Admission, the existing Ordinary Shares and Placing Shares have not been admitted to dealings on any recognised investment exchange nor has any application for such admission been made nor are there intended to be any other arrangements for there to be such dealings in the existing Ordinary Shares or Placing Shares.
- 3.13 The Placing Shares will rank *pari passu* in all respects with the existing Ordinary Shares including the right to receive all dividends and other distributions declared, made or paid after Admission on the issued share capital.

#### **4. Memorandum and Articles of Association**

A summary of the terms of the Memorandum and Articles of Association of the Company is set out below. The summary below is not a complete copy of the terms of the Memorandum and Articles of Association. A complete copy of the Memorandum and Articles of Association is available for inspection as described in paragraph 16 below.

##### *4.1 Memorandum of Association*

The principal objects of the Company are set out in paragraph 4 of the Company's Memorandum of Association and are to carry on business as a general commercial company.

##### *4.2 Articles of Association*

New Articles of Association of the Company were adopted (conditional on Admission) on 12 July 2005. The Articles of Association of the Company ("Articles") contain, *inter alia*, provisions to the following effect:

###### *(a) Share rights*

Subject to the Act and to any special rights attached to existing shares or classes of shares, any share may be issued with, or have attached to it, such rights and restrictions as the Company may by ordinary resolution determine.

###### *(b) Voting*

Subject to any special rights or restrictions as to voting attached to any share by or in accordance with the Company's articles of association, at meetings of members:

- (i) on a show of hands every member who is present in person shall have one vote;
- (ii) on a poll every member who is present in person or by proxy shall have one vote for every share of which he is the holder.

Unless the Board otherwise decides, a member shall not be entitled to attend or vote, either in person or by proxy, at any general meeting of the Company or to exercise any other right as a member in respect of any share held by him unless and until all calls and other sums presently payable by him in respect of that share have been paid.

###### *(c) Variation of rights*

Subject to the Act, whenever the share capital of the Company is divided into different classes of shares, rights attached to any class of shares may be varied or abrogated (whether or not the Company is being wound up) in such manner (if any) as may be provided by those rights or, if no provision is made, either: (i) with the consent in writing of the holders of not less than three quarters in nominal value of the

issued shares of that class; or (ii) with the sanction of an extraordinary resolution passed at a separate general meeting of the holders of those shares. At every such separate meeting (except an adjourned meeting) the quorum shall be two persons holding or representing by proxy not less than one third in nominal value of the issued shares of the class and at a adjourned meeting one holder present in person or by proxy (whatever the number of shares held by him) may constitute a quorum.

(d) *Transfer of shares*

Transfers of shares may be effected by an instrument of transfer in the usual common form or in any other manner as the Directors may approve. Any written instrument of transfer of a share shall be signed by or on behalf of the transferor (and the transferee in the case of a partly paid share) and the transferor shall be deemed to remain the holder of the share until the name of the transferee is entered in the register of members in respect thereof.

The Directors may in their absolute discretion and without assigning any reason therefore decline to register the transfer of any share which is not a fully paid share.

Any shares in the Company may be held in uncertificated form and title to such shares may be transferred by means of a relevant system in accordance with The Uncertificated Securities Regulations 2001.

(e) *Return of capital on winding up*

If the Company shall be wound up, the liquidator may, with the sanction of an extraordinary resolution of the Company, and any other sanction required by the Act: (i) divide amongst the members in specie the whole or any part of the assets of the Company and may, for such purpose, set such values as he deems fit upon any property to be divided as aforesaid and may determine how such division shall be carried out as between the members or different classes of members; or (ii) vest the whole or any part of such assets in trustees upon such trusts for the benefit of the members as the liquidator shall think fit, but no member shall be compelled to accept any assets upon which there is any liability.

(f) *Redemption and pre-emption*

There are no redemption or pre-emption rights on transfer attaching to the Ordinary Shares.

(g) *Alteration of share capital*

(i) The Company may by ordinary resolution increase, consolidate or divide its share capital or cancel any shares which have not, at the date of the ordinary resolution, been taken or agreed to be taken by any person and, subject to the Act, diminish the amount of its share capital by the nominal amount of shares so cancelled. The Company may (subject to any conditions and consents required by law and any rights conferred on the holders of any class of shares) by special resolution reduce its share capital or any capital redemption reserve or share premium account in any manner.

(ii) Whenever (as a result of a consolidation or sub-division of shares) any member is entitled to a fraction of a share, the Board may on behalf of the members deal with the fractions as it thinks fit. In particular, but without limitation, it may sell the shares representing the fractions for the best price reasonably obtainable to any person (including, subject to the Act, the Company) and distribute the net proceeds of sale in proportion among those members (unless the amount due to a member is less than £3 in which case it may, as the Board may determine, be retained for the benefit of the Company).

(h) *Purchase of own shares*

The Company may, subject to the Act and the rights of the holders of any class of shares purchase all or any of its shares of any class, including any redeemable shares.

(i) *Borrowing powers*

The Board may exercise all the powers of the Company to borrow money and to mortgage or charge all or any part of its undertaking, property and assets and uncalled capital, and, subject to the Act, issue debentures and other securities. The Board shall restrict the borrowings of the Company and exercise all voting and other rights or powers of control exercisable by the Company in relation to its subsidiary undertakings so as to ensure (or as regards subsidiary undertakings, to ensure so far as they can so ensure) that the aggregate amount for the time being remaining outstanding of all moneys borrowed by the Company and all of its subsidiary undertakings (the "Group") and owing to persons outside the Group shall not at any time without the previous sanction of an ordinary resolution of the Company exceed an amount equal to 3 times the aggregate of the amount paid up on the allotted or issued share capital of the Company and the total reserves of the Group.

(j) *Directors*

(i) Each of the Directors (excluding the executive Directors) may be paid a fee at such rate as may from time to time be determined by the Board, provided that such fees in aggregate shall not exceed £200,000 per annum (to be increased annually in line with any percentage increase in RPI) or such higher amount as may be determined by the Company by ordinary resolution. The Directors shall also be entitled to be paid all travelling, hotel and other expenses properly and reasonably incurred by them in connection with the business of the Company or in discharge of their duties as directors. If, in the opinion of the Directors, any director performs any special services on behalf of the Company or its business such director may be paid such additional remuneration therefore as the Directors may from time to time determine.

(ii) At each annual general meeting of the Company one third (or the nearest number to and exceeding one third) of the Directors who are subject to retirement by rotation for the time being shall retire from office and shall be eligible for re-election. The Directors to retire in each year shall be those subject to retirement by rotation who have been longest in office since they were last appointed or re-appointed, but as between persons who became directors at the same time, those to retire shall (unless they otherwise agree amongst themselves) be determined by lot.

(iii) Subject to the Act and the provisions of the Articles, no director shall be disqualified by his office from contracting with the Company either with regard to his tenure of any office or as vendor, purchaser or otherwise, nor shall any such contract or any contract or arrangement entered into by or on behalf of the Company in which any director is in any way interested be liable to be avoided, nor shall any director so contracting or being so interested be liable to account to the Company or the members for any profit, remuneration or other benefit realised by any such contract or arrangement, by reason only of such director holding that office or of the fiduciary relationship thereby established.

(iv) A Director shall not vote or be counted in any quorum in respect of any contract or arrangement or any other proposal in which (together with any interest of any person connected with him) to his knowledge he has a material interest, save that this prohibition shall not apply to:

(A) the giving of any security, guarantee or indemnity in respect of money lent or obligation undertaken by him or any other person at the request of or the benefit of the Company or any of its subsidiary undertakings;

- (B) the giving by the Company or any of its subsidiary undertakings of any security, guarantee or indemnity to a third party in respect of a debt or obligation of the Company or any of its subsidiary undertakings of which he has himself assumed the responsibility in whole or in part under a guarantee or indemnity or by the giving of security;
  - (C) any proposal concerning any offer of shares or in debentures or other securities of the Company or any of its subsidiary undertakings issued or to be issued pursuant to any offer or invitation to holders of securities of the Company or any of its subsidiary undertakings in which offer he is interested as a participant in the underwriting or sub-underwriting of any such securities whether or not issued or to be issued as aforesaid;
  - (D) any contract or arrangement in which he is interested by virtue of his interest in shares or debentures or other securities of the Company or by reason of any other interest in or through the Company;
  - (E) any contract or arrangement concerning any other company (not being a company in which the director is (or any person connected with him) beneficially interested in 1 per cent. or more of the equity share capital of any class or the voting rights (as defined in the Articles) in which he is interested, directly or indirectly;
  - (F) any arrangement for the benefit of the employees of the Company or any of its subsidiary undertakings, which does not provide in respect of any director as such any privilege or advantage not generally awarded to the employees to which such arrangement relates; and
  - (G) any proposal concerning any insurance which the Company is empowered to purchase and/or maintain for the benefit of and against any liability incurred by any directors of the Company or persons who include directors.
- (v) A Director shall not vote or be counted in the quorum on any Board resolution concerning his own appointment as the holder of any office or place of profit with the Company or any company in which the Company is interested including fixing or varying the terms of his appointment or the termination thereof. Where proposals are under consideration concerning the appointment (including fixing or varying the terms of appointment) or the termination of the appointment of two or more directors to offices or places of profit with the Company or any other company in which the Company is interested, a separate resolution may be put in relation to each Director and in such a case each of the Directors concerned shall be entitled to vote (and be counted in the quorum) in respect of each resolution except that concerning his own appointment or the termination of his own appointment or in the case of an office or place of profit with any such other company as aforesaid where the other company is a company in which the Director owns 1 per cent. or more.
- (vi) The Board may exercise all the powers of the Company to pay, provide or procure the grant of pensions or other retirement or superannuation benefits and death, disability or other benefits, allowances or gratuities to any person who is or has been at any time a director of the Company or in the employment or service of the Company or of any company which is or was a subsidiary of or associated with the Company or of the predecessors in business of the Company or of any such subsidiary or associated company or the relatives or dependants of any such person. For that purpose the Board may procure the establishment and maintenance of, or participate in, or contribute to, any non-contributory or contributory pension or superannuation fund, scheme or arrangement and pay any insurance premiums.

- (vii) The Board may appoint one or more Directors to hold any executive office (including that of chief executive or managing director) for such term (subject to the Act) and on such terms as the Board may decide.
  - (viii) A Director may hold and be remunerated in respect of any other office or place of profit with the Company (except that of auditor of the Company) in conjunction with his office as Director and he (or his firm) may act in a professional capacity for the Company (except as auditor) and may be remunerated for it.
- (k) *Indemnity of officers*
- (i) Subject to the provisions of, and so far as may be consistent with, the Act, every director, alternate director, manager, and officer other than an auditor will be indemnified out of the funds of the Company against all costs, charges, losses, expenses and liabilities incurred by him (or them) in the execution and discharge of his (or their) duties, including any liability incurred by him in, successfully defending any proceedings (whether civil or criminal) which relate to anything done or omitted or alleged to have been done or omitted by him (or them) in that capacity.
  - (ii) The Company may also indemnify a director for all liabilities incurred by such director arising from actions brought by third parties, even if the corresponding judgment goes against the director (except in respect of criminal fines, fines by regulators and the legal costs of criminal proceedings which result in conviction). The Company may also pay the defence costs of a director in relation to an action brought by the company, as they are incurred, but the director would be liable to pay damages awarded to the Company and repay such defence costs if the defence was not successful.
- (l) *Untraced shareholders*
- Subject to various notice requirements, the Company may sell any shares of a member if dividend payments on those shares have become payable and the cheques or warrants have remained uncashed or been returned to the Company on two or more consecutive occasions or on one occasion and reasonable enquiries have failed to establish any new address or new account for that person and no communication has been received by the Company from the member or the person entitled by transmission to the share.
- (m) *Dividends*
- (i) Out of the profits of the Company available for distribution, the Company may in general meeting declare dividends, but no dividend shall be in excess of the amount recommended by the Board.
  - (ii) Except so far as the rights attaching to the shares provide otherwise, all dividends shall be apportioned and paid proportionately to the amounts paid up on the shares (provided that calls have been made for all such payments) during any portion or portions of the period in respect of which the dividend is paid.
  - (iii) All unclaimed dividends, interest or other sums payable may be invested or otherwise made use of by the Board for the benefit of the Company until claimed and the Company shall not be constituted a trustee in respect of such dividends, interest or other sums.
  - (iv) Any dividend which remains unclaimed for a period of 12 years after being declared or becoming due for payment shall be forfeited and shall revert to the Company. No dividend shall bear interest against the Company.
  - (v) There are no fixed dates on which entitlement to dividend arises.

- (vi) The Board may pay such interim dividends as appear to it to be justified by the financial position of the Company. If the share capital of the Company is divided into different classes, the Board may pay such interim dividends on shares which rank after shares conferring preferential rights with regard to dividend as well as on shares conferring preferential rights unless at the time of payment any preferential dividend is in arrears.
- (vii) If a payment for a dividend is left uncashed or is returned to the Company on two or more consecutive occasions, or on one occasion and reasonable enquiries have failed to establish any new address or new account for that person, the Company shall not be obliged to send any dividends until that person notifies the Company of an address or an account to be used for that purpose.
- (viii) The Board may, with the authority of an ordinary resolution and in accordance with the Articles offer any holders of Ordinary Shares the right to elect to receive further new fully paid shares instead of cash in respect of all (or part) of any dividend specified by the ordinary resolution.
- (n) *Non-United Kingdom shareholders*  
Members with addresses outside the United Kingdom are not entitled to receive notices from the Company unless they have given the Company an address within the United Kingdom at which such notices may be served, or an address to which notices and other documents may be sent using electronic communications (as defined in the Electronic Communication Act 2000).

## 5. Directors' and other interests

5.1 The interests of the Directors and the persons connected with them (within the meaning of section 346 of the Act) in the share capital of the Company (which would be required to be notified to the Company pursuant to sections 324 and 328 of the Act or would be required to be disclosed in the register of directors' interests pursuant to section 325 of the Act) as at the date of this document and as expected to be immediately following Admission are as follows:

<i>Name</i>	<i>As at the date of this document</i>		<i>Following the Placing and Admission</i>	
	<i>Number of Ordinary Shares</i>	<i>Percentage of issued share capital</i>	<i>Number of Ordinary Shares</i>	<i>Percentage of Enlarged Issued Share Capital</i>
C M Moore	100,168	0.40%	131,483	0.36%
K R K Matthews	46,968	0.19%	46,968	0.13%
R J G Clarke	5,548	0.02%	7,636	0.02%
C J Eld*	1,021,972	4.07%	1,295,488	3.52%
R M Pettigrew	—	—	—	—
E Weeks	—	—	—	—

\* The holding of C J Eld comprises shares held by Seighford Investment Company Limited, a company in which Charles Eld and persons connected with him hold in aggregate a 31 per cent. ordinary shareholding.

5.2 As at the date of this document, the Company has granted the following options to the Directors pursuant to the Pre-Admission Scheme.

	<i>EMI Pre-Admission Scheme: ordinary shares under option</i>	<i>Unapproved Pre-Admission Scheme: ordinary shares under option</i>	<i>Earliest date from which exercisable</i>	<i>Expiry date</i>	<i>Exercise price per share (£)</i>
CM Moore	223,896	506,616	EMI: immediately. Unapproved: 263,112 shares immediately; 243,504 shares at 01/01/06	29/03/2015	0.4465789
KRK Matthews	223,896	1,161,128	EMI: immediately. Unapproved: 501,448 shares immediately; 329,840 shares at 01/01/06; 329,840 shares at 01/01/07	29/03/2015	0.4465789
RJG Clarke	223,896	350,968	EMI: immediately. Unapproved: 63,536 shares immediately; 143,716 shares at 01/01/06; 143,716 shares at 01/01/07	29/03/2015	0.4465789
CJ Eld	n/a	n/a	n/a	n/a	n/a
RM Pettigrew	n/a	n/a	n/a	n/a	n/a
E Weeks	n/a	n/a	n/a	n/a	n/a

5.3 The Company is not aware of any person, other than the Directors and their connected persons (whose interests are set out above), who as at the date of this document is, or who immediately following the Placing and Admission will be interested (within the meaning given to that expression in Part VI of the Act), directly or indirectly, in three per cent. or more of the share capital of the Company or who will directly or indirectly, jointly or severally, exercise or could exercise control over the Company, other than those set out below:

<i>Name</i>	<i>As at the date of this document</i>		<i>Following the Placing and Admission</i>	
	<i>Number of Ordinary Shares</i>	<i>Percentage of issued share capital</i>	<i>Number of Ordinary Shares</i>	<i>Percentage of Enlarged Issued Share Capital</i>
BASF Venture Capital GmbH	6,150,528	24.50%	6,642,711	18.05%
Foresight Technology VCT Plc	5,136,080	20.46%	5,683,108	15.44%
Trivest VCT plc*	4,623,764	18.42%	5,115,947	13.90%
Richard Farleigh	3,166,312	12.61%	7,028,519	19.10%
Quester Academic GP Limited	1,427,356	5.69%	1,427,356	3.88%
Seighford Investment Company Limited	1,021,972	4.07%	1,295,488	3.52%
Inter Ikea Finance SA Holding	951,140	3.79%	951,140	2.58%
Stagecoach Bus Holdings Limited	—	—	2,035,485	5.53%

\*Christopher Moore is a director of Trivest VCT plc.

5.4 Save as set out in this paragraph 5:

- (a) neither the Directors nor any person connected with them (within the meaning of section 346 of the Act) has any interest, beneficial or non-beneficial, in the share or loan capital in the Group or in any related financial product (as defined in the AIM Rules) referenced to the Ordinary Shares;
- (b) there are no outstanding loans granted or guarantees provided by any member of the Group to or for the benefit of the Directors;
- (c) none of the Directors has any interest, direct or indirect, in any assets which have been or are proposed to be acquired or disposed of by, or leased to, any member of the Group; and
- (d) none of the Directors has any interest, whether direct or indirect, in any contract or arrangement which is or was unusual in its nature or conditions or significant to the business of the Group taken as a whole, which was effected by any member of the Group since its incorporation and which remains in any respect outstanding or unperformed.

## 6. Directors' Service Agreements and Terms of Appointments

6.1 Details of the service agreements of the executive Directors are set out below:

- (a) **Kevin Matthews** has entered into a service agreement with the Company dated 14 July 2005 to act as Chief Executive Officer. The terms of the service agreement are conditional upon Admission. The service agreement can be terminated by either side giving to the other not less than 6 months' written notice. In return for his services under the service agreement, Kevin Matthews is paid a salary of £120,000 per annum, plus expenses. In addition, he is entitled to participate in a bonus scheme (the terms of which are determined by the Company from time to time) providing for a bonus of up to 50 per cent. of basic salary (or such other amount as the Company's remuneration committee decides) and in the Company's share option scheme. He is also entitled to participate in the Company's group personal pension scheme (to which the Company contributes a maximum of 5 per cent. of basic salary), permanent health insurance scheme (providing for cover at 75 per cent. of basic salary) and private medical scheme. The service agreement restricts Kevin Matthews from having any interest in a competitive business (save that he is authorised to continue as a non-executive director of Elementis plc). There are also provisions which, in the event of the termination of his employment, restrict the association by Kevin Matthews with a competitor and restrict him from soliciting clients and employees (with whom or which he has been personally involved) of the Group or from being in any way interested in any client of the Group (with which he has been personally involved) if the effect would be that the client reduced their business with it, for a period of 6 months from the date of termination of his employment (the period of the non-compete clause is restricted to reflect any time spent on gardening leave). The service agreement also contains provisions which, *inter alia*, restrict the disclosure of trade secrets or confidential information and protect the Group's intellectual property rights.
- (b) **Richard Clarke** has entered into a service agreement with the Company dated 14 July 2005 to act as Chief Financial Officer. The terms of the service agreement are conditional upon Admission. The service agreement can be terminated by either side giving to the other not less than 6 months' written notice. In return for his services under the service agreement, Richard Clarke is paid a salary of £88,400 per annum, plus expenses. In addition, he is entitled to participate in a bonus scheme (the terms of which are determined by the Company from time to time) providing for a bonus of up to 25 per cent. of basic salary (or such other amount as the Company's remuneration committee decides) and in the Company's share option scheme. He is

also entitled to participate in the Company's group personal pension scheme (to which the Company contributes a maximum of 5 per cent. of basic salary), permanent health insurance scheme (providing for cover at 75 per cent. of basic salary) and private medical scheme. The service agreement restricts Richard Clarke from having any interest in a competitive business (save that he is however authorised to retain his existing shareholding (10 per cent.) in FDUK Limited). There are also provisions which, in the event of the termination of his employment, restrict the association by Richard Clarke with a competitor and restrict him from soliciting clients and employees (with whom or which he has been personally involved) of the Group or from being in any way interested in any client of the Group (with which he has been personally involved) if the effect would be that the client reduced their business with it, for a period of 6 months from the date of termination of his employment (the period of the non-compete clause is restricted to reflect any time spent on gardening leave). The service agreement also contains provisions which, *inter alia*, restrict the disclosure of trade secrets or confidential information and protect the Group's intellectual property rights.

- (c) **Christopher Moore** has entered into a service agreement with the Company dated 14 July 2005 to act as Executive Chairman and provide his services for 2 days per week (or equivalent). The terms of the service agreement are conditional upon Admission. The service agreement can be terminated by either side giving to the other not less than 6 months' written notice. In return for his services under the service agreement, Christopher Moore is paid a salary of £70,500 per annum, plus expenses. In addition, he is entitled to participate in a bonus scheme (the terms of which are determined by the Company from time to time) providing for a bonus up to 50 per cent. of basic salary (or such other amount as the Company's remuneration committee decides) and in the Company's share option scheme. He is also entitled to participate in the Company's group personal pension scheme (to which the Company contributes a maximum of 5 per cent. of basic salary), or as an alternative to have the same level of contributions paid into a personal pension arrangement. The service agreement restricts Christopher Moore from having any interest in a competitive business (save that he is however authorised to remain a director of Trivest VCT plc and to hold up to 5 per cent. of the shares in any quoted/unquoted company). There are also provisions which, in the event of the termination of his employment, restrict the association by Christopher Moore with a competitor and restrict him from soliciting clients and employees (with whom or which he has been personally involved) of the Group or from being in any way interested in any client of the Group (with which he has been personally involved) if the effect would be that the client reduced their business with it, for a period of 6 months from the date of termination of his employment (the period of the non-compete clause is restricted to reflect any time spent on gardening leave). The service agreement also contains provisions which, *inter alia*, restrict the disclosure of trade secrets or confidential information and protect the Group's intellectual property rights.
- 6.2 The Company has entered into a letter of appointment with Charles Eld under which he has been appointed a non-executive Director. The appointment may be terminated at any time by three months written notice by either party expiring on or after the initial term. Under the letter of appointment, the non-executive is entitled to an annual fee of £20,000 together with fees of £2,500 for chairing each of the remuneration and audit committees giving an aggregate fee of £25,000 and reimbursement of reasonable expenses but no other remuneration.
- 6.3 The Company has entered into a letter of appointment with Robert Pettigrew under which he has been appointed a non-executive Director. The appointment may be terminated at any time by three months written notice by either party expiring on or after the initial term. Under the letter of appointment, the non-executive is entitled to an annual fee of £20,000 and reimbursement of reasonable expenses but no other remuneration.

- 6.4 The Company has entered into a letter of appointment with Edward Weeks under which he has been appointed a non-executive Director. The appointment may be terminated at any time by three months written notice by either party expiring on or after the initial term. Under the letter of appointment, the non-executive is entitled to an annual fee of £20,000 together with a fee of £2,500 for chairing the risk committee giving an aggregate fee of £22,500 and reimbursement of reasonable expenses but no other remuneration.
- 6.5 Save as stated in paragraph 6.1 above, there are no service agreements existing or proposed between any Director and any member of the Group.
- 6.6 The aggregate of the remuneration paid including benefits in kind granted to the Directors for the year ended 31 December 2004 was £335,573. It is estimated that the aggregate remuneration to be paid including benefits in kind to be granted to the Directors in the current financial year under arrangements currently in force will not exceed £500,000.
- 6.7 Oxonica Materials paid £25,313.08 to the Inland Revenue on 25 March 2004 comprising the tax and National Insurance due on various options that had been granted to Kevin Matthews by Oxonica Materials. This sum was paid in order to discharge obligations that Oxonica Materials had entered into at the time Kevin Matthews commenced employment with the Group.

## 7. Additional Information on the Directors and senior management

- 7.1 The Directors hold or have held the following directorships or are or have been partners in the following partnerships within the five years prior to the date of this document:

<i>Name</i>	<i>Current Directorships/Partnerships</i>	<i>Previous Directorships/Partnerships</i>
Christopher Moore	Bletchley Park Trust Limited (Place of Incorporation: UK) (Company Number: 02730618)	Bayley Partners Limited (Place of Incorporation: UK) (Company Number: 04122328)
	Cornerstone VCT plc (Place of Incorporation: UK) (Company Number: 04513811)	Fleming Investment Management (Jersey) Limited (Place of incorporation: Jersey)
	Fight for Sight (Place of Incorporation: UK) (Company Number: 04424695)	Fleming Ventures Limited (Place of incorporation: Jersey) (Company Number 03886232)
	Matrix Income and Growth VCT plc (Place of Incorporation: UK) (Company Number: 05153931)	Oxonica Materials Limited (Place of Incorporation: UK) (Company Number: 3533639)
	Oxonica plc (Place of incorporation: UK) (Company Number: 5363273)	Southwell Gardens Management Limited (Place of Incorporation: UK) (Company Number: 02405790)
	Trivest VCT plc (Place of Incorporation: UK) (Company Number: 04069483)	The Stop Loss Mutual Insurance Association Limited (Place of Incorporation: UK) (Company Number: 02430780)
	Triven VCT plc (Place of Incorporation: UK) (Company Number: 03707697)	
Kevin Matthews	Elementis Plc (Place of incorporation: UK) (Company Number: 03299608)	
	Oxonica plc (Place of incorporation: UK) (Company Number: 5363273)	

<i>Name</i>	<i>Current Directorships/Partnerships</i>	<i>Previous Directorships/Partnerships</i>
Kevin Matthews (continued)	Oxonica Materials Limited (Place of Incorporation: UK) (Company Number: 3533639) Oxonica Energy Limited (Place of Incorporation: UK) (Company Number: 4332799)	
Richard Clarke	Oxonica plc (Place of Incorporation: UK) (Company Number: 5363273) Oxonica Materials Limited (Place of Incorporation: UK) (Company Number: 3533639) Oxonica Energy Limited (Place of Incorporation: UK) (Company Number: 4332799)	ACP Metal Finishing Pte Ltd (Place of Incorporation: Singapore) (Company Number: n/a) ACP (Malaysia) Ltd (Place of Incorporation: Malaysia) (Company Number: n/a) Amarel Precision Instruments Inc (Place of Incorporation: USA) (Company Number: n/a) Avimo Group Limited (Place of Incorporation: Singapore) (Company Number: n/a) Avimo Europe Limited (Place of Incorporation: UK) (Company Number: 02696054) Avimo Middle East Limited (Place of Incorporation: UK) (Company Number: 00951831) Avimo Business Development Limited (Place of Incorporation: UK) (Company Number: 03770437) Dowty RFL Industries Inc (Place of Incorporation: USA) (Company Number: n/a) Dowty Electronics Inc (Place of Incorporation: USA) (Company Number: n/a) Dowty Aerospace Aviation Services Pte Ltd (Place of Incorporation: Singapore) (Company Number: n/a) Dowty Aerospace Singapore Pte Ltd (Place of Incorporation: Singapore) (Company Number: n/a) IQE PLC (Place of Incorporation: UK) (Company Number: 03745726) Magellan Aerospace (UK) Limited (Place of Incorporation: UK) (Company Number: 04909329) Mayflower Aerospace Limited (Place of Incorporation: UK) (Company Number: 04122651)

<i>Name</i>	<i>Current Directorships/Partnerships</i>	<i>Previous Directorships/Partnerships</i>
Richard Clarke (continued)		May Be Not Limited (Place of Incorporation: UK) (Company Number: 00720270) MAL Operations Limited (Place of Incorporation: UK) (Company Number: 04569033) MAL Holdings Limited (Place of Incorporation: UK) (Company Number: 04137152) Mayflower Aerospace (Civil) Limited (Place of Incorporation: UK) (Company Number: 04571066) Mayflower Aerospace (Fabrications) Limited (Place of Incorporation: UK) (Company Number: 02854848) Mayflower Aerospace (Hansford) Limited (Place of Incorporation: UK) (Company Number: 02017466) Mayflower Aerospace (Metal Treatments) Limited (Place of Incorporation: UK) (Company Number: 01665930) Mayflower Aerospace (Military) Limited (Place of Incorporation: UK) (Company Number: 04571049) Mayflower Aerospace (Poole) Limited (Place of Incorporation: UK) (Company Number: 00723273) Mayflower Aerospace (Wrexham) Limited (Place of Incorporation: UK) (Company Number: 01396688) Mayflower Technical Services Limited (Place of Incorporation: UK) (Company Number: 04137196) Mayflower Aerospace (Diac) Limited (Place of Incorporation: UK) (Company Number: 00552029) Neeb Optik GmbH (Place of Incorporation: Germany) (Company Number: n/a) PT Kalimasada Pusaka (Place of Incorporation: Indonesia) (Company Number: n/a) Thales AFV Systems Ltd (Place of Incorporation: UK) (Company Number: 00894514)

<i>Name</i>	<i>Current Directorships/Partnerships</i>	<i>Previous Directorships/Partnerships</i>
Richard Clarke (continued)		Thales Optronics (Taunton) Ltd (Place of Incorporation: UK) (Company Number: 00328043) Thales Optical Imaging Limited (Place of Incorporation: UK) (Company Number: 00036219) Thales Optical Coatings Limited (Place of Incorporation: UK) (Company Number: 00514290) Thales Optronics (Bury St. Edmunds) Limited (Place of Incorporation: UK) (Company Number: 01127352) Trim Group Holdings Limited (Place of Incorporation: UK) (Company Number: 03668754)
Charles Eld	Concise Connections Limited (Place of Incorporation: UK) (Company Number: 03432714) GRP Laminates Limited (Place of Incorporation: UK) (Company Number: 05288206) Nuclear Engineering Services Limited (Place of Incorporation: UK) (Company Number: 04959394) Nuclear Engineering (Holdings) Limited (Place of Incorporation: UK) (Company Number: 04954170) Obscure Inns Limited (Place of Incorporation: UK) (Company Number: 04357343) Oxonica plc (Place of Incorporation: UK) (Company Number: 5363273) Power Jet Systems Limited (Place of Incorporation: UK) (Company Number: 03153398) Power Jet SPE Limited (Place of Incorporation: UK) (Company Number: 04538868) Seighford Investment Company Limited (Place of Incorporation: UK) (Company Number: 03745079) Tiger Marine Limited (Place of Incorporation: UK) (Company Number: 03922501)	Belvia Limited (Place of Incorporation: Bahamas) (Company Number: FC023594) Millbrook Instruments Limited (Place of Incorporation: UK) (Company Number: 03037974) Oxonica Materials Limited (Place of Incorporation: UK) (Company Number: 3533639)
Robert Pettigrew	Biowisdom Limited (Place of Incorporation: UK) (Company Number: 03861669)	Generics Asset Management Limited (Place of Incorporation: UK) (Company Number: 02032847)

<i>Name</i>	<i>Current Directorships/Partnerships</i>	<i>Previous Directorships/Partnerships</i>
Robert Pettigrew (continued)	British Smaller Technology Companies VCT plc (Place of Incorporation: UK) (Company Number: 03646045)	Gentech Investment Management Limited (Place of Incorporation: UK) (Company Number: 03998940)
	British Smaller Companies VCT plc (Place of Incorporation: UK) (Company Number: 03134749)	Identica Generics Limited (Place of Incorporation: UK) (Company Number: 01982817)
	British Smaller Technology Companies VCT 2 plc (Place of Incorporation: UK) (Company Number: 04084003)	Qariba Limited (Place of Incorporation: UK) (Company Number: 03708998)
	Cambridge Advanced Materials Limited (Place of Incorporation: UK) (Company Number: 02127727)	Sphere Medical Limited (Place of Incorporation: UK) (Company Number: 04179507)
	Digital Healthcare Limited (Place of Incorporation: UK) (Company Number: 03838790)	Technology & Finance Limited (Place of Incorporation: UK) (Company Number: 03631188)
	Genesis Consulting Limited (Place of Incorporation: UK) (Company Number: SC121256)	The Generics Group Limited (Place of Incorporation: UK) (Company Number: 02015785)
	Oxonica plc (Place of Incorporation: UK) (Company Number: 5363273)	Voxar Limited (Place of Incorporation: UK) (Company Number: SC145641)
	Sphere Medical Holding Limited (Place of Incorporation: UK) (Company Number: 04179503)	Westica Limited (Place of Incorporation: UK) (Company Number: SC150365)
	Timberpost Limited (Place of Incorporation: UK) (Company Number: SC277557)	Oxonica Materials Limited (Place of Incorporation: UK) (Company Number: 3533639)
	Zinwave Limited (Place of Incorporation: UK) (Company Number: 04587255)	
Edward Weeks	Alderley Environmental Ltd (Place of Incorporation: UK) (Company Number: 2459761)	Basell Polypropylene Limited (Place of Incorporation: UK) (Company Number: 03370392)
	Alderley plc (Place of Incorporation: UK) (Company Number: 02378070)	Cogent SSC Limited (Place of Incorporation: UK) (Company Number: SC129351)
	Alderley Materials Ltd (Place of Incorporation: UK) (Company Number: 2405903)	Oxonica Materials Limited (Place of Incorporation: UK) (Company Number: 3533639)
	European Plastic Technology Solutions Limited (Place of Incorporation: UK) (Company Number: 05312612)	
	Oxonica plc (Place of Incorporation: UK) (Company Number: 5363273)	
	Polymer Training Limited (Place of Incorporation: UK) (Company Number: 02946174)	
	Rapid Moulding Technologies Limited	

<i>Name</i>	<i>Current Directorships/Partnerships</i>	<i>Previous Directorships/Partnerships</i>
Edward Weeks (continued)	(Place of Incorporation: UK) (Company Number: 04742037) The Polymer Industry Education and Training Trust Limited (Place of Incorporation: UK) (Company Number: 02576374)	

- 7.2 (a) Richard Clarke was a director of Mayflower Aerospace Limited from 6 May until his resignation on 30 September 2003. Administrative receivers were appointed to Mayflower Aerospace Limited on 15 September 2003.
- (b) Charles Eld was a secretary of Oxford Nanosciences Limited from 25 November 2000 until its dissolution on 22 October 2002. Oxford Nanosciences Limited never traded.
- (c) Robert Pettigrew was a director of Westica Limited from 18 April 2001 until his resignation on 16 August 2004. An administration order was placed on Westica Limited in November 2004 when Mr Pettigrew was no longer a director.

7.3 Save as disclosed in paragraph 7.2 above, none of the Directors has:

- (a) any unspent convictions in relation to indictable offences;
- (b) any bankruptcy order made against him or entered into any voluntary arrangements;
- (c) ever been a director of a company which has been placed in receivership, creditors' voluntary liquidation, compulsory liquidation or administration, or been subject to a voluntary arrangement or any composition or arrangement with its creditors generally or any class of its creditors, whilst he was a director of that company or within the 12 months after he ceased to be a director of that company;
- (d) ever been a partner in any partnership which has been placed in compulsory liquidation or administration or been the subject of a partnership voluntary arrangement whilst he was a partner in that partnership or within the 12 months after he ceased to be a partner in that partnership;
- (e) owned, or been a partner in a partnership which owned, any asset which, while he owned that asset, or while he was a partner or within 12 months after his ceasing to be a partner in the partnership which owned that asset, entered into receivership;
- (f) been publicly criticised by any statutory or regulatory authority (including recognised professional bodies); or
- (g) been disqualified by a court from acting as a director of any company or from acting in the management or conduct of the affairs of a company.
- 7.4 (a) Ronen Hazarika, being one of the senior management as referred to in Part I, paragraph 9 has a 40 per cent. interest in Neuftec Limited, which licenses technology to Oxonica Energy under a licence referred to in Part IV.
- (b) Gareth Wakefield ("GW"), being one of the senior management as referred to in Part I, paragraph 9, receives a share in royalty proceeds under the ISIS Innovation Ltd licenses referred to in Part IV on the following basis:

<i>Net revenue to ISIS</i>	<i>GW receives</i>
	<i>1/3 of</i>
To £72,000	63%
To £720,000	31.5%
Over £720,000	15.75%

## **8. Lock-in and orderly market agreements**

Various lock-in and orderly market arrangements have been entered into as follows:

- (i) By way of separate lock-in agreements among Panmure Gordon & Co, the Company and each of the Locked-in Shareholders, each of the Locked-in Shareholders has undertaken to Panmure Gordon & Co and the Company, without the prior written consent of Panmure Gordon & Co (or such other brokers as the Company may appoint), not to dispose of any interest in any of the Ordinary Shares held by them comprising, in aggregate, 60.89 per cent. of the Ordinary Shares following the Admission and the Placing (which excludes any Ordinary Shares either (i) subscribed by them pursuant to the Placing or (ii) issued to them on capitalising the loans made by them to the Group, as referred to in paragraph 16 of this Part I of this document) for a period of 12 months following Admission, save in the event of certain specified circumstances which are in accordance with standard market practice in this type of agreement, including a take-over offer.

Thereafter for a further 12 months the Locked-in Shareholders have also agreed that any disposals by them of such Ordinary Shares will be made subject to Panmure Gordon & Co's reasonable representations with a view to maintaining an orderly market. Any such disposals are to be through Panmure Gordon & Co or such other person as may be the broker of the Company from time to time.

- (ii) Those Directors who will hold Ordinary Shares at the time of Admission, together with certain senior managers, Stuart Anderson, Dr Barry Park and David Browning, (together being the "Locked-in Managers"), have entered into separate lock-in agreements with Panmure Gordon & Co and the Company, pursuant to which undertakings on the same terms as those being given by the Locked-in Shareholders have been given to Panmure Gordon & Co and the Company, save that the Locked-in Managers are not permitted to dispose of any of interests in the Ordinary Shares held by them at Admission before the date which is for a period of 18 months from Admission, or, if later, before the publication of the preliminary results for the year ending 31 December 2006, save in the event of the same specified circumstances. These arrangements have been made in respect of 196,043 Ordinary Shares representing 0.53 per cent. of the issued share capital of the Company following Admission.
- (iii) All other employees of the Group who are currently shareholders in the Company have entered into separate lock-in agreements with Panmure Gordon and the Company pursuant to which undertakings on the same terms as those being given by the Locked-in Shareholders have been given to Panmure Gordon & Co and the Company save that such employees are not permitted to dispose of any of the interests in the Ordinary Shares held by them at Admission (which excludes any Ordinary Shares subscribed by them pursuant to the Placing) for a period of 18 months from Admission, save in the event of the same specified circumstances. These arrangements have been made in respect of 100,072 Ordinary Shares representing 0.27 per cent. of the issued share capital of the Company following Admission.
- (iv) Also, the Placing Shareholders by way of separate orderly market agreements entered into with Panmure Gordon & Co and the Company have agreed not to dispose of any interests in the Placing Shares and any Ordinary Shares issued to them on capitalising the loans made by any of them to the Group as referred to in paragraph 16 of this Part I of this document for a period of 12 months following Admission in order to maintain an orderly market without the prior written consent of Panmure Gordon & Co, save in the event of the same specified circumstance referred to above. These arrangements have been made in respect of 10,520,608 ordinary Shares representing 28.58 per cent. of the issued share capital of the Company following Admission.

## **9. Material contracts**

The following contracts, not being contracts entered into in the ordinary course of business, have been entered into by members of the Group during the two years immediately preceding

the date of this document or, if earlier, are contracts under which any member of the Company or any of its subsidiaries has any obligations or entitlements which, at the date of this document, are, or may be, material:

- (a) admission agreement (the "Admission Agreement") dated 14 July 2005 between (1) Panmure Gordon & Co (2) the Company (3) the Directors and (4) Stuart Anderson, Dr. Barry Park and David Browning ("the Senior Employees") pursuant to which, Panmure Gordon & Co agrees to advise the Company regarding the Admission. The Admission Agreement contains customary warranties from the Company, the Directors and the Senior Employees and indemnities from the Directors and the Company each in favour of Panmure Gordon & Co. Claims under such warranties against the Directors and Senior Employees may only be made during the period ending on the later of two years from Admission or 120 days after publication of the accounts for the year ended 31 December 2006. The liability of the warrantors in respect of the warranties is limited to the amounts of £180,000 in the case of each of the Executive Directors, and £30,000 in respect of each of the non-Executive Directors and the Senior Employees. The Admission Agreement may be terminated in certain circumstances prior to Admission including on the occurrence of certain "force majeure" events and circumstances where any warranties are found to be untrue or incorrect in any material respect in the context of the Placing. Under the Admission Agreement the Company has agreed to pay to Panmure Gordon & Co a fee of £250,000, together with VAT thereon, where appropriate.
- (b) engagement letter dated 17 December 2004 between (1) Oxonica Materials and (2) Panmure Gordon & Co (the "Engagement Letter") pursuant to which, Panmure Gordon & Co agreed to act as nominated adviser to Oxonica Materials in relation to Admission and the Company's continuing obligations as required by the AIM Rules and to be paid a corporate finance fee of £250,000 in relation to Admission. The Engagement Letter contains certain undertakings given by Oxonica Materials and the Directors and indemnities in respect of, *inter alia*, compliance with all applicable laws and regulations. The Engagement Letter was novated to the Company in a letter dated 13 July 2005.
- (c) agreement dated 14 July 2005 between Panmure Gordon & Co and the Company whereby Panmure Gordon & Co is appointed and agreed to act as nominated adviser to the Company. The Company agrees to pay Panmure Gordon & Co as nominated adviser after Admission a fee of £50,000 per annum. Either party may terminate this agreement upon thirty days written notice. The agreement contains a customary indemnity from the Company in favour of Panmure Gordon & Co. The Company and Panmure Gordon & Co have agreed that Panmure Gordon & Co will act on any future equity fundraising should the Company undertake one in the next two years.
- (d) agreement dated 8 June 2005 between Primavera Limited and the Company pursuant to which Primavera Limited agreed to introduce investors to the Company to participate in the Placing in consideration of a fee of 3 per cent. of the subscription price payable by such investors on the Placing. Richard Farleigh, an existing Shareholder of the Company, holds a 25 per cent. shareholding in Primavera Limited.
- (e) agreement with Foresight Venture Partners dated 16 June 2005 pursuant to which the Company agrees to pay an arrangement fee of 3 per cent. of the subscription price payable by any funds managed or advised by Foresight Venture Partners or their associates or other investors introduced by them to participate in the Placing.
- (f) agreement dated 22 September 2004 between Stagecoach Bus Holdings Limited ("**Stagecoach Holdings**"), Oxonica Materials and Oxonica Energy whereby Stagecoach Holdings was granted 2 options to acquire up to 9.75 per cent. in total of the issued share capital of Oxonica Energy. The first option over 5 per cent. of such shares having an option price of £342,105 and the second option over the remaining 4.75 per cent. of such shares having an option price of £1,052,631.

- (g) agreement dated 5 July 2005 between Stagecoach Holdings, the Company, Oxonica Materials and Oxonica Energy, whereby the parties agree that the first option referred to in (f) above be exercised at its exercise price of £342,105 in such manner so that Stagecoach Holdings be issued 991,644 Ordinary Shares immediately before and conditional on Admission. This will be effected by Stagecoach Holdings exercising such option over shares in Oxonica Energy Limited, then transferring those shares to Oxonica Materials in exchange for the issue to Stagecoach Holdings of shares in Oxonica Materials, then Stagecoach Holdings transferring its shares in Oxonica Materials to the Company in exchange for the issue to it of Ordinary Shares. Stagecoach Holdings also undertakes to order Envirox™ with a value of £500,000 and to release the debenture granted to Stagecoach Holdings by Oxonica Energy since the loan made by Stagecoach Holdings to Oxonica Materials will be discharged in partial satisfaction of the price payable on exercise of the said first option.
- (h) agreement with First Capital Corporation Limited dated 7 July 2005 entered into pursuant to an option agreement dated 28 June 2002 between Oxonica Materials and First Capital Corporation Limited pursuant to which, First Capital Corporation Limited exchanged options over ordinary shares in Oxonica Materials for an option over 37,392 ordinary shares in Oxonica plc at an exercise price of 98p per ordinary share, exercisable at any time prior to 28 June 2007.
- (i) agreement with Trivest VCT plc approved by the Board on 13 July 2005 pursuant to which Trivest VCT plc is granted an option to acquire 128,972 Ordinary Shares at an exercise price per Ordinary Share of £0.4465789 exercisable at any time prior to the tenth anniversary of the date of grant. These options have been granted to Trivest VCT plc pursuant to an agreement between Trivest VCT plc and Christopher Moore, who is a Director of Trivest VCT plc, whereby Mr Moore has agreed to account to Trivest VCT plc for 15 per cent. of all emoluments and fees received by him in excess of £45,000 per annum from the Company in recognition of the time and services provided by Mr. Moore to the Company.
- (j) Options over 12,084 Ordinary Shares at £0.44 per Ordinary Share and 15,200 Ordinary Shares at £0.01 per Ordinary Share have been granted to Mark Green and options over 7,980 Ordinary Shares at £0.92 per Ordinary Share have been granted to Simon Jones. Both Simon Jones and Mark Green are former employees of the Group and the options are currently exercisable.

## 10. Share Option Schemes

10.1 The Directors believe that equity incentives are and will continue to be a means of retaining, attracting and motivating key employees. The Company has therefore established and granted options under the Pre-Admission Scheme to certain employees of the Group. In addition, the Company has established the Post-Admission Scheme for employee equity participation which will be appropriate for granting options on/after Admission.

10.2 The principal terms of the Share Option Schemes are as follows:

10.3 The Pre-Admission Scheme

The Pre-Admission Scheme consists of an enterprise management incentive (“**EMI**”) share option scheme under which potentially tax-favourable options can be granted (the “**EMI Pre-Admission Scheme**”), together with an unapproved share option scheme under which less tax favourable options can be granted (the “**Unapproved Pre-Admission Scheme**”). The principal terms of the EMI Pre-Admission Scheme and the Unapproved Pre-Admission Scheme and the provisions governing the options already granted under the Pre-Admission Scheme are as follows:

(a) *The EMI Pre-Admission Scheme*

(i) *Eligibility*

Any employee (including any executive director) of the Group may be selected for participation at the discretion of the Board provided he or she:

- (A) is required to spend at least 25 hours a week (or, if less, 75 per cent. of his or her overall remunerative time) working for any member of the Group; and
- (B) does not (together with his or her associates) own or control 30 per cent of the ordinary share capital of any member of the Group (a “**material interest**”).

(ii) *Grant of options*

Options may be granted at any time by the Company to any eligible employee, however as noted above, the Company has established a new employee share option scheme for the grant of options on/after Admission and does not intend making any further grants of options under the Pre-Admission Scheme. Details of the Post-Admission Scheme are included at paragraph 10.4 below.

Options are granted by the relevant employee and the Company entering into an option agreement which satisfies the relevant EMI legislation. The grant of an option may also be made conditional on the optionholder in question signing a form of consent under the Data Protection Act 1998 relating to the processing of that individual's data for the purposes participating in the EMI Pre-Admission Scheme.

(iii) *Exercise price*

Options are granted at a price determined by the Board. However, in order to obtain the full tax benefits afforded to EMI options the Company has made an application to HM Revenue & Customs Shares Valuation in respect of the options granted under the EMI Pre-Admission Scheme and has granted all such options at an option price equal to the agreed value. The option price cannot in any event be set at less than the nominal value of a share where the option is to subscribe for shares in the Company.

(iv) *Performance conditions and vesting*

Options may be granted subject to the attainment of specified performance conditions (to be determined prior to grant). In addition, options may be made exercisable only to the extent that they have vested in accordance with a vesting schedule. For existing options granted under the EMI Pre-Admission Scheme, certain options have been granted subject to such performance conditions and vesting schedules whilst others are exercisable immediately without reference to performance or deferred vesting.

(v) *Exercise periods*

Options may normally only be exercised during a specified option period determined at the date of grant and specified in the relevant option agreement and only to the extent that the relevant vesting date(s) and performance conditions (if any) are met. Options cannot be exercised later than 5 pm on the day before the tenth anniversary of the date of grant of the option (or any earlier date specified by the Board).

Options may also be exercised following the death in service of the optionholder or where the optionholder's employment ceases because of injury, sickness or disability (in each case evidenced to the satisfaction of the Board), redundancy or retirement. Where employment is terminated by the optionholder's resignation or by reason of the optionholder's employing company or business being transferred outside the Group, options will lapse unless the Board permits the optionholder to exercise them.

In the case of death, options may normally be exercised by the optionholder's personal representatives within the twelve months of death. In other cases, options may (subject, where appropriate, to the Board's permission) be exercised within a period to be determined by the Board. In all these cases, options will not be exercisable except to the extent that the performance conditions set in relation to that option and the relevant vesting date(s) (if any) have been satisfied or passed at the date of cessation of employment.

Options can also be exercised at the Board's discretion where a "disqualifying event" occurs as defined in the EMI legislation (other than through the optionholder ceasing to meet the working time requirement referred to in paragraph 10.3(a)(i)(A) above). Such exercise is limited to a period of 40 days after such event.

Options may also be exercised in the event of the winding-up or change of control of the Company as outlined in paragraph 10.3(a)(viii) below.

(vi) *Taxation of options*

Optionholders agree to put the Company (or other relevant accountable person) in funds to satisfy any liability to tax (including both employer's and employee's national insurance contributions) arising from the exercise of their options. The EMI Pre-Admission Scheme also prescribes that Shares may be sold on behalf of an optionholder to meet any such liabilities.

(vii) *Lapse of options*

Options are personal to optionholders and may not be transferred or otherwise disposed of or charged. Any such dealing shall cause the option to lapse. Options shall also lapse on the expiry of the option period (which shall not exceed 5 pm on the day before the tenth anniversary of the date of grant of the option), the cessation of an optionholder's employment (other than in the circumstances referred to in paragraph 10.3(a)(v) above) and at the end of the relevant periods for exercise as outlined in paragraph 10.3(a)(v).

Options will also lapse to the extent to which they have not vested and to the extent to which the relevant performance conditions (if any) are not met on the date of cessation of employment of the optionholder by reason of death, injury, sickness, disability, redundancy, retirement or resignation.

Options also lapse on the bankruptcy of the relevant optionholder or where the optionholder fails to sign the relevant Data Protection Act 1998 form of consent.

(viii) *Changes in control and winding-up*

In the event of a change in control of the Company as a result of a general offer (other than pursuant to a group reorganisation), options may be exercised within twenty days of the change of control and the Board at its discretion may allow an optionholder to exercise an option where no such right of exercise existed at that time in accordance with the original terms of an option.

If any person becomes bound or entitled to acquire shares in the Company under sections 428-430 of the Companies Act 1985 options may be exercised during the period of such entitlement or while such person remains bound to do so.

In the event of the reconstruction or amalgamation of the Company pursuant to Section 425 of the Companies Act 1985, options may be exercised within six months of the Court sanctioning the reconstruction or amalgamation.

In the above circumstances and also where there is an exchange of shares in the Company for shares in an acquiring company which constitutes a "qualifying exchange of shares" within the EMI legislation, existing options may be released in exchange for equivalent options of the same value over shares in the acquiring company.

In the event of the voluntary winding-up of the Company, options may be exercised at any time up to the commencement of the winding up and shall lapse on the commencement of the winding up to the extent that they are not then exercised.

(ix) *Variation of capital*

If any alteration of the share capital of the Company occurs by reason of a capitalisation or rights issue or a sub-division, consolidation or reduction or otherwise, then the Company can make such adjustments as it considers necessary to the exercise price and to the number of shares under any option.

However, except in the case of a capitalisation issue, the auditors of the Company must have advised the Company in writing that such adjustments are fair and reasonable. No adjustment can be made to the terms of an option, if the effect of the adjustment would be to increase the market value of the shares under that option or cause the option to cease to satisfy the requirements of the EMI legislation.

In addition, where the option is to subscribe for shares, the option price payable for each share cannot be reduced below the nominal value of that share unless the Directors on behalf of the Company agree to pay up the shortfall by capitalising the Company's reserves.

As soon as reasonably practicable after making any such adjustment which affects an optionholder the Company shall give written notice to the optionholder.

(x) *Alteration*

The Board may make any amendments to the EMI Pre-Admission Scheme as it sees fit. If however the terms of the EMI Pre-Admission Scheme are to be altered so as to materially adversely affect an optionholder, such an alteration cannot take effect without the optionholder's prior written consent. In addition, no alteration can be made which would have the effect of making an option cease to satisfy or to never satisfy the requirements of the EMI legislation. As soon as reasonably practicable after making any alteration the Board shall give written notice to any optionholder affected.

(xi) *Miscellaneous provisions*

- (A) Participation in the EMI Pre-Admission Scheme is separate from an optionholder's contract of employment.
- (B) As soon as reasonably practicable following the exercise of an option the relevant shares will be allotted or transferred to the optionholder (or his or her personal representatives where such exercise occurs following an optionholder's death in service).
- (C) Notification of the grant of an EMI option must be given to HM Revenue & Customs within 92 days of the date of grant of an option by each optionholder and his or her employing company.
- (D) The Directors may at any time resolve to cease granting options under the EMI Pre-Admission Scheme but in such event existing options will be unaffected.

(xii) *Options granted*

- (A) Options over an aggregate of 1,784,708 Ordinary Shares have been granted pursuant to the EMI Pre-Admission Scheme.

(b) *The Unapproved Pre-Admission Scheme*

The provisions of the Unapproved Pre-Admission Scheme are identical to those of the EMI Pre-Admission Scheme except that:

- (i) An employee is eligible to be granted options under the Unapproved Pre-Admission Scheme irrespective of whether his or her committed time equals 25 hours a week or if less, 75 per cent. of the employee's remunerative time. In addition, employees can still be granted options under the Unapproved Pre-Admission Scheme if they have a material interest in the Company or in any member of the Group as referred to in paragraph 10.3(a)(i)(B) above.
- (ii) Unlike an option granted under the EMI Pre-Admission Scheme, an unapproved option does not need to be granted by the Company and the optionholder executing an option agreement. An unapproved option is granted by the Company unilaterally. After the unapproved option has been granted, the Company will issue an option certificate executed as a deed.

- (iii) Agreement with HM Revenue & Customs Shares Valuation is not required to be sought when setting the option price of an option granted under the Unapproved Pre-Admission Scheme.
- (iv) There is no right to exercise an unapproved option on the occurrence of a disqualifying event (as defined in the EMI legislation).
- (v) Adjustments to the terms of an unapproved option can be made even if the effect of the adjustment would be to increase the market value of the shares under any unapproved option.
- (vi) There is no requirement for the Directors and the optionholders to notify HM Revenue & Customs of the grant of an unapproved option within 92 days of the date of grant.
- (vii) In the event of any dispute or disagreement as to the interpretation of the Unapproved Pre-Admission Scheme or as to any question or right arising from or related to the Unapproved Pre-Admission Scheme, the decision by the Directors shall (except as regards to any matter required to be determined by the auditors hereunder) be final and binding upon all persons and in the case of an unapproved option any such dispute or disagreement does not have to be resolved in such manner as to ensure that the unapproved option meets the requirements of the EMI legislation and does not give rise to disqualifying event.
- (viii) Unlike the EMI Pre-Admission Scheme, there are no specific rules governing the terms of any options that are offered in a takeover situation in exchange for existing unapproved options.
- (ix) Options over an aggregate of 2,152,472 Ordinary Shares have been granted pursuant to the Unapproved Pre-Admission Scheme.

#### 10.4 *The Post-Admission Scheme*

The Post-Admission Scheme consists of the EMI Post-Admission Scheme and the Unapproved Post-Admission Scheme. The principal terms of the EMI Post-Admission Scheme and the Unapproved Post-Admission Scheme are as follows:

##### (a) The EMI Post-Admission Scheme

###### (i) *Eligibility*

An option can only be granted to an employee (including an executive director) if the employee meets certain eligible employee requirements. The Board (including the remuneration committee) will determine who is to participate (subject as provided below).

In order to be eligible an employee's committed working time must equal or exceed 25 hours a week or, if less, must amount to not less than 75 per cent. of the employee's overall remunerative time. The employee must also not have a material interest in any member of the Group as referred to in paragraph 10.3(a)(i)(B).

No employee can participate who is within six months of their anticipated retirement date at the date of grant of the option.

###### (ii) *Grant of Options*

Options may be granted by the Company to any eligible employee during the following periods:

- (A) six weeks from the adoption of the EMI Post-Admission Scheme;
- (B) six weeks following the announcement of the Company's interim or final results in any year;
- (C) six weeks following the commencement of an employee's employment but only in respect of a grant to that employee;

- (D) six weeks after the lifting of any rule or regulation preventing the grant of an option; and
- (E) at any other time where the Board determines that there are exceptional circumstances justifying the grant of an option.

Options are granted by the eligible employee and the Company entering into an option agreement, which satisfies EMI legislation. The Board may request that the grant of an option shall be conditional upon the eligible employee signing a form of consent pursuant to the Data Protection Act 1998.

No option may be granted more than ten years after the date on which the Board adopt the EMI Post-Admission Scheme. An eligible employee to whom an option is granted may by written notice within 30 days of the date of grant renounce their rights under the option in which event the option will be deemed for all purposes never to have been granted.

No option can be granted where such grant would be in breach of the AIM Model Code and no person is entitled as of right to be granted an option under the EMI Post-Admission Scheme.

The Board may delegate its powers under the Post-Admission Scheme to a duly constituted committee of the Board, including the Remuneration Committee.

(iii) *Exercise price*

The exercise price per share applying to an option depends upon whether shares in the Company are listed on the Official List of the London Stock Exchange at the date of grant in question. If the shares are not so listed (including if they are listed on AIM) then the price will be the value determined in accordance with the relevant tax legislation and as agreed with HM Revenue & Customs Shares Valuation in advance.

If shares in the Company are listed on the Official List options will be granted at a price which represents not less than the middle market quotation of an ordinary share as derived from the Official List on the dealing day before the option is granted or an average of such quotations for the three preceding dealing days. In any event, where the option is to subscribe for new shares the price cannot be set at less than the nominal value of a share.

(iv) *Performance conditions*

Options may be granted subject to and will usually only be exercisable on the attainment of specified conditions (to be determined prior to grant). The effect of such conditions will be that options will only be exercisable if, in a defined period following grant, the financial performance of the Company so warrants.

(v) *Limits on participation and normal exercise period*

The aggregate market value of shares (valued at the date of grant of the relevant option or options) granted to an individual under the scheme or any other executive share option scheme in any year (excluding any options granted prior to Admission) cannot exceed one times the amount of his annual salary.

Generally, subject to satisfying any performance condition and/or any vesting date(s) attached to the option, an option is first exercisable on the third anniversary of grant and then remains exercisable for a period of seven years after that. Options lapse on leaving employment subject to certain rights of exercise summarised in paragraph 10.4(a)(vi).

(vi) *Other exercise periods and cessation of employment*

Options may be exercised following the death in service of the optionholder or where the optionholder's employment ceases because of injury, sickness, disability, redundancy or retirement or where the optionholder's employing company or business is transferred outside the Group. Where employment is terminated for some other reason, options will lapse unless the Board permits the optionholder to exercise them.

In the case of death, options may be exercised within the twelve months after death; and in other cases, options may (subject, where appropriate, to the Board's permission) normally be exercised within the period ending six months after termination of employment. In all these cases, options will not normally be exercisable except to the extent that the performance target and vesting date(s) set in relation to the options have been satisfied at that time. The Board may however make such adjustments to the performance targets as they shall in their discretion think fit where employment terminates before the expected end of the performance period.

Exercise is also conditional on the employee or director in question putting the Company or his employer in funds for any income tax and both employee's and employer's National Insurance Contributions that are payable as a result of the exercise of the option.

(vii) *Scheme limits*

The maximum number of shares over which options to subscribe may be granted under the Post-Admission Scheme on any day when aggregated with shares issued or issuable under options granted under any other employee share scheme operated by the Company (excluding any options granted prior to Admission) in the immediately preceding ten years may not exceed 10 per cent. of the ordinary share capital in issue at that time.

The maximum number of shares over which options to subscribe may be granted under the Post-Admission Scheme on any day when aggregated with shares issued or issuable under options granted under any executive share option scheme operated by the Company (excluding any options granted prior to Admission) in the immediately preceding ten years may not exceed 10 per cent. of the ordinary share capital in issue at that time.

The Board may from time to time specify the maximum number of shares under option that may be granted in any one day subject to the above limits.

(viii) *Changes in control and winding-up*

In the event of a change in control of the Company as a result of a general offer, options may be exercised within six months of the change of control.

If any person becomes bound or entitled to acquire shares in the Company under sections 428-430 of the Companies Act 1985 options may be exercised during the period of such entitlement or while such person remains bound to do so.

In the event of the reconstruction or amalgamation of the Company pursuant to section 425 of the Companies Act 1985, options may be exercised within six months of the Court sanctioning the reconstruction or amalgamation.

In the above circumstances, existing options may be released in exchange for options of equivalent value over shares in the acquiring company or another eligible company.

In the event of a resolution being passed for the voluntary winding-up of the Company, options may be exercised conditionally at any time up to the commencement of the winding up.

Any performance target and vesting date(s) imposed on existing options will normally have to be satisfied in order for the options to be exercisable in any of these circumstances. The Board may however adjust or waive any performance target if they determine that such adjustment or waiver is appropriate. As mentioned in paragraph 10.4(a)(vi) above exercise will also be conditional on the employee, or director in question ensuring that there is no adverse exposure for any member of the Group to tax and employee's and employer's National Insurance Contributions as a consequence of the exercise of an option.

(ix) *Lapse of options*

Options are non-transferable and will lapse if they are purported to be transferred, charged or otherwise dealt with.

Options will also lapse on the bankruptcy of the relevant optionholder, the failure to sign a relevant consent form under the Data Protection Act 1998 (referred to in paragraph 10.4(a)(vi) above), the expiry of the relevant option period (which may not exceed ten years from the date of grant of an option) and on the expiry of the relevant periods for exercise referred to in paragraph 10.4(a)(vi).

(x) *Variation of capital*

If any alteration of the share capital of the Company occurs by reason of a capitalisation or rights issue or a sub-division, consolidation or reduction or otherwise then the Board can make such adjustments as deemed appropriate to the exercise price and the number and description of shares subject to any option provided that the auditors of the Company have confirmed in writing that such adjustments are fair and reasonable.

However no adjustment can be made to the terms of the option, if the effect of the adjustment would be to increase the market value of the shares under that option or cause the option to cease to satisfy the requirements of the EMI legislation.

Furthermore where the option is to subscribe for shares, the option price payable for each share cannot be reduced below the nominal value of that share unless the Board on behalf of the Company agree to pay up the shortfall between the option price and the nominal value by capitalising the Company's reserves.

As soon as reasonable practicable after making any such adjustment which affects an optionholder the Company shall give notice to the optionholder.

(xi) *Alteration of Scheme and termination*

Subject as provided below, the Board may at any time alter the EMI Post-Admission Scheme in any respect. However the terms of the EMI Post-Admission Scheme may only be amended to the advantage of optionholders or potential optionholders with the prior approval of the shareholders of the Company in a general meeting, except for minor amendments to benefit the administration of the EMI Post-Admission Scheme, to take account of a change in legislation or to obtain or maintain favourable tax, exchange control or regulatory treatment.

However the Board may in respect of an option granted to an employee who may become subject to taxation outside the United Kingdom, amend or alter the provisions of the options to take account of overseas taxation or securities law.

In addition no alteration can be made which would have the effect of making the option cease to satisfy or to never satisfy the requirements of the EMI legislation. As soon as reasonably practical after making any such alteration the Board shall give written notice to any optionholder affected.

The Board may at any time resolve to cease making any further grants of options under the EMI Post-Admission Scheme but in such event the rights of existing optionholders will not be effected.

(xii) *Miscellaneous*

Following the exercise of an option shares will be issued or transferred to the optionholder within 30 days. Such shares will be transferred subject to the Memorandum and Articles of Association of the Company and (if then listed) the Company will apply for such shares to be admitted for trading on the relevant exchange on which they are then listed.

(b) *The Unapproved Post-Admission Scheme*

The provisions of the Unapproved Post-Admission Scheme are identical to those of the EMI Post-Admission Scheme except that:

- (i) An employee is eligible to be granted options under the Unapproved Post-Admission Scheme irrespective of whether his or her committed time equals 25 hours a week or if less, 75 per cent. of the employee's remunerative time. In addition, employees can still be granted options under the Unapproved Post-Admission Scheme if they have a material interest in the Company or in any member of the Group as referred to in paragraph 10.3(a)(i)(B) above.
- (ii) Unlike an option granted under the EMI Pre-Admission Scheme, an unapproved option does not need to be granted by the Company and the optionholder executing an option agreement. An unapproved option is granted by the Company unilaterally. After the unapproved option has been granted, the Company will issue an option certificate executed as a deed.
- (iii) There are no specific provisions in the Unapproved Post-Admission Scheme which govern the terms of any options which are exchanged for existing options in the event of a change of control.

## **11. Litigation**

Neither the Company nor any other member of the Group is or has been engaged in any legal or arbitration proceedings nor, as far as the Directors are aware, are any legal or arbitration proceedings, active, pending or threatened against, or being brought by, the Company or any other member of the Group, which may have or have had during the 12 months preceding the date of this document, a significant effect on the Group's financial position.

## **12. Working capital**

The Directors are of the opinion that, having made due and careful enquiry, the working capital available to the Group, taking into account the estimated net proceeds of the Placing, will be sufficient for its present requirements, that is for at least twelve months from the date of Admission.

## **13. Taxation**

The comments set out below are based on existing law and what is understood to be current practice of HM Revenue & Customs. They are intended as a general guide only and apply only to Shareholders who are resident and ordinarily resident in the United Kingdom for tax purposes (except to the extent that specific reference is made to Shareholders resident outside the United Kingdom), who hold the shares as investments, who are the absolute beneficial owners of those shares, and who are not employees or connected with employees of the Company.

Any person who is in any doubt as to their taxation position or who is subject to taxation in any jurisdiction other than the United Kingdom, should consult their own professional advisers immediately.

### *13.1 Taxation of dividends*

Under current United Kingdom law no taxation will be withheld from dividends paid by the Company.

An individual United Kingdom resident shareholder is generally entitled to a tax credit in respect of the dividend, which he can set off against his total liability to United Kingdom income tax. The amount of the tax credit is equal to 1/9th of the cash dividend. The cash dividend aggregated with the amount of the tax credit (the "gross dividend") will be included in the shareholder's income for United Kingdom tax purposes and will be treated as the top slice of the shareholder's income. Thus, a shareholder receiving a dividend of £90 will be treated as having received income of £100 which has a tax credit of £10 attached to it. An individual United Kingdom resident shareholder who, after taking into account the gross dividend, pays income tax at the lower rate or basic rate will pay tax on the gross dividend at the Schedule F ordinary rate of 10 per cent., against which he can set the tax credit. Such a shareholder will have no further liability to account for income tax on the dividend.

An individual United Kingdom resident shareholder who, after taking into account the gross dividend, pays income tax at the higher rate will pay tax on the gross dividend at the Schedule F upper rate of 32.5 per cent. against which he can set the tax credit. Such a shareholder will have a liability to account for additional tax on the gross dividend, calculated by multiplying the gross dividend by the Schedule F upper rate and deducting the tax credit. This will be equivalent to 25 per cent of the cash dividend received. An individual United Kingdom resident shareholder who does not pay income tax or whose liability to income tax does not exceed the amount of the tax credit will not be entitled to claim repayment of the tax credit attaching to the dividend.

Trustees who are liable to income tax at the rate applicable to trusts (previously 34 per cent. but increased to 40 per cent. with effect from 6 April 2004) will pay tax on the gross dividend at the Schedule F trust rate (previously 25 per cent. but increased to 32.5 per cent. with effect from 6 April 2004) against which they can set the tax credit. To the extent that the tax credit exceeds the trustees' liability to account for income tax the trustees will have no right to claim repayment of the tax credit. Special taxation provisions apply where trustees of discretionary trusts receive payment of dividends and subsequently make a distribution out of the trust. Trustees who are in any doubt as to their position should consult their own professional advisers immediately.

A United Kingdom resident corporate Shareholder will not generally be liable to corporation tax on any dividends received.

United Kingdom pension funds and charities are generally exempt from tax on dividends which they receive but are not entitled to claim repayment of the tax credit.

Whether a non United Kingdom resident Shareholder is entitled to repayment of any part of the tax credit in respect of dividends paid to him, will depend upon the provisions of the double tax treaty (if any) between the country in which the Shareholder is resident and the United Kingdom. A non United Kingdom resident Shareholder should consult his own professional advisers on the possible application of such provisions, the procedure for claiming repayment and what relief or credit (if any) may be claimed for such tax credit in the jurisdiction in which he is resident.

*13.2 Taxation of Chargeable Gains*

A subsequent disposal of New Ordinary Shares may result in a liability to United Kingdom taxation of chargeable gains, depending upon individual circumstances.

Shareholders should note that since 6 April 2000 all shares listed on AIM will qualify for "business assets" taper relief provided that the company in which the shares are held is a trading company or is the holding company of a trading group. HM Revenue and Customs will consider whether the company is a "trading company" or the "holding company of a trading group" when a disposal is made, and it is not possible to guarantee this in advance. Shareholders should consult their own professional adviser relating to this prior to making a disposal of the shares. The effect of this relief is to reduce the proportion of any capital gain chargeable to tax for each complete year that the shares are held. Maximum relief is obtained once shares have been held for two years.

Under current United Kingdom law the effect of taper relief is as follows:

<i>Number of years shares held</i>	<i>Percentage of Gain Chargeable</i>	<i>Effective rate when higher rate tax payer (40%)</i>
0-1	100	40
1-2	50	20
More than 2	25	10

Special tax provisions may apply to individuals who are employees or connected with employees of the Company. Such individuals who are in any doubt as to their position should contact their own professional advisers immediately.

*13.3 Stamp Duty and Stamp Duty Reserve Tax*

No liability to stamp duty or stamp duty reserve tax should arise on the allotment of Ordinary Shares under the Placing.

### 13.3.1 *Shares held outside the CREST system*

The conveyance or transfer on sale of the Ordinary Shares will usually be subject to stamp duty on the instrument of transfer, generally at the rate of 0.5 per cent. of the amount or value of the consideration. Stamp duty is charged in multiples of £5. An obligation to account for stamp duty reserve tax ("SDRT") at the rate of 0.5 per cent. of the amount or value of the consideration will also arise if an unconditional agreement to transfer the Ordinary Shares is not completed by a duly stamped instrument of transfer before the "accountable date" for SDRT purposes. The accountable date is the seventh day of the month following the month in which the agreement for the transfer is made. Payment of the stamp duty will cancel the liability to account for SDRT. It is the purchaser who is in general liable to account for stamp duty or SDRT.

### 13.3.2 *Shares held within the CREST system*

The transfer of the Ordinary Shares in uncertificated form in the CREST system will generally attract a liability to SDRT at the rate of 0.5 per cent. of the amount or value of the consideration. The SDRT is payable on the fourteenth day following the date of the unconditional agreement for the transfer of the Ordinary Shares.

The above statements are intended as a general guide to the current position. Certain categories of person are not liable to stamp duty or SDRT, and others may be liable at a higher rate or may, although not primarily liable for the tax, be required to notify and account for it under the Stamp Duty Reserve Tax Regulations 1986.

## 13.4 *EIS Tax Relief*

The following information provides an outline only of the EIS tax reliefs. It is not an exhaustive summary of EIS and it is strongly recommended that potential investors obtain independent advice from a professional adviser to take into account the effect of the legislation in the context of their particular personal circumstances.

### 13.4.1 *EIS Relief*

EIS relief may be available where a qualifying company issues new shares. The purpose of issuing these shares (and any others issued at the same time) must be to raise money for a qualifying business activity. The EIS shares must be subscribed wholly in cash and be fully paid up at the date of issue. The shares must be held for at least three years after issue or if later three years after the company begins to trade.

The EIS relief has four elements:

#### (a) *Income tax relief*

The individual's income tax liability for the year of the share issue is reduced by 20 per cent. of the amount subscribed, subject to reducing his income tax liability to nil. In effect, up to 20 per cent. of the cost of the investment is paid for by the HM Revenue and Customs.

The minimum investment which is eligible for relief is £500 per company. The maximum subscription on which an individual can claim income tax relief in any one tax year is £200,000. Husbands and wives are taxed independently of each other and the £200,000 limit is available to each of them. This limit has been increased from £150,000 to £200,000 for shares issued after 6 April 2004.

If the Company does not employ at least 80 per cent. of the proceeds of the EIS share issue and other shares of the same class issued on the same day (the "Share Issue") for a qualifying business activity within 12 months of the commencement of the Company's trade, and the remainder within 24 months of this date (the "Relevant Time Limits"), all of the income tax relief of the EIS investors would be clawed back.

#### (b) *CGT exemption*

If the EIS investor does not dispose of his or her shares for at least three years after the shares were issued or, if later, three years after the company begins to carry on a qualifying trade and the EIS income tax relief has not been withdrawn in the meantime any capital gains realised on the disposal of the shares will be tax free. If the proceeds of the Share Issue are not employed for a qualifying business activity within the Relevant Time Limits, any gain on the disposal of EIS shares would not benefit from the capital gains tax exemption.

(c) *Loss relief*

Tax relief is available where there is a loss on a disposal at any time of shares on which EIS income tax relief (see (a) above) or CGT deferral (see (d) below) has been given. The amount of the loss (after taking account of any income tax relief initially obtained) can be set against the individual's gains or (providing the company is treated as a qualifying trading company and the individual makes a claim to this effect) his taxable income in the tax year in which disposal occurs or the preceding year. Any capital loss not relieved under these provisions against capital gains of the same tax year may be carried forward and relieved against future capital gains.

(d) *CGT Deferral relief*

To the extent to which a UK resident investor (including individuals and certain trustees) subscribes in cash for qualifying shares, he can claim to defer tax on all or part of a chargeable gain arising on the disposal of any asset. Although there is a limit of £200,000 for income tax relief and the exemption from CGT (see (a) and (b) above), there is no limit on the amount of gain that can be deferred.

The subscription must be made within one year before or three years after the date of the disposal which gives rise to the gain, or the date when a previously deferred gain crystallises. The gain is deferred until there is a chargeable event such as a disposal of the shares or an earlier breach of the EIS rules.

If the proceeds of the Share Issue are not employed for a qualifying business activity within the Relevant Time Limits, any gains deferred would come back into charge.

#### 13.4.2 *"Qualifying Investor" for EIS Income Tax Relief*

EIS income tax relief applies only to individuals and not, for example, companies or trusts. The individual need not be resident and ordinarily resident in the UK for tax purposes when the shares are issued but he will, of course, need to be liable to UK income tax. There are certain restrictions affecting the EIS investor which apply throughout the investor's "five-year period". The investor's five-year period is from two years before until three years after the EIS shares are issued, or if later three years after the company begins to carry on a qualifying trade. The main restriction is that the EIS investor must not be "connected" with the company during the "five-year period" referred to above.

The EIS legislation specifies a number of ways in which the investor can become connected with the company, for example:

- (a) If his and his "associates" interest in the company exceeds 30 per cent. (and this includes share capital, loan capital, voting rights or assets on a winding up).
- (b) If he or any of his "associates" is an employee or partner of the company.
- (c) If he or any of his "associates" is a director of the company (although under the EIS, an investor who has not previously been connected with the company or employed in the business can take an active role in its management through becoming a paid director, as long as he receives only reasonable remuneration).

There are various anti-avoidance measures designed to prevent abuse of the EIS. The rules are very complex and are therefore not set out here. In particular, there are measures to deny relief if the investor or his "associates" receive certain payments or value from the company or any person connected with it during the investor's three year qualifying period. Other anti-avoidance measures relate to arrangements for a change of control of the company. This is not an exhaustive list of all the anti-avoidance rules, and it is essential that advice is taken at the outset and also before any transactions or arrangements are entered into in the relevant period.

#### 13.4.3 *Qualifying company*

The company must:

- (a) exist for the purposes of carrying on one or more qualifying trades; or

(b) be the holding company of a trading group.

Any activities, apart from the qualifying trading activities, must not be significant.

Certain activities are excluded and the trade of the company must not include these activities (to any substantial extent) during the company's three-year qualifying period. What constitutes "substantial" is not defined but the HM Revenue and Customs interprets this as 20 per cent.

There are complex rules governing the identity of the company carrying on the qualifying activity. There are also conditions which must be met in relation to subsidiaries of EIS companies.

The gross assets of the EIS company must not exceed £15 million before the relevant share issue and £16 million afterwards. At least 80 per cent. of the money raised by the EIS company must be used for the purpose of a "qualifying business activity" carried on wholly or mainly in the UK within 12 months of the shares being issued or, where this activity constitutes preparing to carry on a qualifying trade, 12 months after the date trading starts. The remainder of the money raised must be employed within 2 years after the date the shares were issued or the commencement of the trade, if later.

#### 13.4.4 *Eligible Shares*

EIS relief is available where "eligible shares" are issued in order to raise money for a "qualifying business activity". Eligible shares are new ordinary shares with no present or future preferential right to income or to assets in a winding up, and with no present or future right to be redeemed. If eligible shares become ineligible during the investor's holding period (see 13.4.1 above), all EIS reliefs will be lost.

All of the company's shares qualifying for EIS relief must be fully paid up in cash throughout the company's "relevant period". The company's relevant period starts on the date the EIS shares are issued. It ends either three years after that date or, if later, three years after the company starts to trade. New provisions in the Finance Act 2004 provide that individuals who subscribe wholly in cash for qualifying shares will not be prevented from obtaining EIS relief because the company also issues bonus shares of the same class to them on the same day, or because any other subscribers for the company's shares which are of the same share class and which are issued on the same day do not subscribe for them wholly in cash.

A company can become listed within its three year relevant period without loss of EIS reliefs. The company only need be unquoted (for these purposes a company whose shares are traded on AIM is considered as being unquoted) at the time the EIS shares are issued provided that no arrangements exist at that time for the company to cease to be an unquoted company.

#### 13.4.5 *Claims*

The company completes and submits form EIS1 to HM Revenue and Customs to the specialist section which deals with EIS. Once HM Revenue and Customs is satisfied that the claim can be accepted it issues a form EIS2 to the company. The EIS2 authorises the company to issue an EIS3 certificate to the EIS investors confirming that they are entitled to the relief. The investor completes a claim on the back of the form EIS3 and sends this to his own Inspector of Taxes who will then give effect to the income tax relief either by adjusting the investor's PAYE code, making a tax repayment or agreeing to offset the relief against outstanding tax liabilities, as appropriate. The claim may alternatively be made by completing the relevant boxes on the individual's self assessment tax return.

The form EIS1 may be submitted by a Company to HM Revenue and Customs once it has completed four months trading. The form must, however, be submitted no later than two years after the end of the tax year in which the shares were issued or, if the company's four months trading ended after the end of that tax year, no later than two years after the end of that period. The claim for tax reliefs must be made by an investor no later than five years after 31 January following the end of the tax year in which the shares are issued.

## 14. Information on the Group

The Group will comprise the Company as the holding company of the group, together with the following subsidiaries and subsidiary undertakings:

<i>Name of subsidiary</i>	<i>Company Registered Number</i>	<i>Proportion of shares held by the Company</i>	<i>Issued Share Capital</i>
Oxonica Materials Limited <sup>1</sup>	3533639	100%	330,319 ordinary shares of £0.01
Oxonica Energy Limited	4332799	100%	1,000,000 ordinary shares of £0.01
Oxonica Overseas Holdings Limited	5322242	100%	1 ordinary share of £0.01
Oxonica Singapore Pte. Limited	200506108R (registered in Singapore)	100%	1 ordinary share of 1 Singapore dollar
Cerulean Asia Pacific Limited	n/a (registered in Hong Kong)	100%	10,000 ordinary shares of HK\$10,000

- <sup>1</sup> The Company acquired Oxonica Materials pursuant to the share for share exchange transaction referred to in paragraph 3 of Part I. The Company is required to submit the stock transfer forms to HM Revenue and Customs for stamp duty adjudication although the Company has been advised that the share for shares exchange will be exempt from stamp duty. The Company is the beneficial owner of the ordinary shares in Oxonica Materials but will only become the legal owner once the Register of Members of Oxonica Materials has been updated following the stamping of the stock transfer forms by HM Revenue and Customs.

Cerulean Asia Pacific Limited is held indirectly by the Company through Oxonica Materials.

## 15. General

15.1 The gross proceeds of the Placing are expected to amount to £8.3 million. Total costs and expenses payable by the Company in connection with the Placing and Admission (including professional fees, commissions, the costs of printing and the fees payable to the registrars) are estimated to amount to approximately £1.2 million (excluding VAT). Included within this amount is a fee of £250,000 payable by the Company pursuant to the Admission Agreement referred to in paragraph 9(a) above.

15.2 In the opinion of the Directors, the minimum amount which must be raised to provide the sums required in respect of the matters specified in paragraph 21 of Schedule 1 to the POS Regulations is £8.0 million which will be applied as follows:

15.2.1 Purchase price of property	£Nil
15.2.2 Preliminary expenses and commissions	£1,200,000
15.2.3 Repayment of money borrowed in respect of 15.2.1 and 15.2.2 above	£Nil
15.2.4 Working capital	£6,800,000

There are no amounts to be provided in respect of the matters aforesaid otherwise than out of the proceeds of the Placing.

15.3 The Placing Price represents a premium of 94.8 pence over the nominal value of 1 pence per Ordinary Share.

15.4 KPMG LLP, Chartered Accountants, of Arlington Business Park, Theale, Reading, RG7 4SD were auditors of Oxonica Materials and its subsidiary undertakings for the year ended 31 December 2004. Grant Thornton LLP of 1 Westminster Way, Oxford OX2 0PZ were auditors of Oxonica Materials for the years ended 31 December 2002 and 31 December 2003.

- 15.5 The Directors confirm that the accounts of Oxonica Materials for the three years ended 31 December 2004 have been prepared in accordance with generally accepted accounting principles and that they accept responsibility for them.
- 15.6 The financial information relating to the Group set out in the accountants' reports in Part V of this document does not comprise statutory accounts within the meaning of section 240 of the Act. Statutory accounts for Oxonica Materials and its subsidiaries for the years ended 31 December 2002 and 2003 have been delivered to the Registrar of Companies and the statutory accounts for the year ended 31 December 2004 will be delivered prior to Admission. The auditors' reports on those accounts were unqualified and did not contain a statement under section 237(2) or (3) of the Act.
- 15.7 J.A. Kemp & Co has given and not withdrawn its written consent to the inclusion of references to its name herein in the form and context in which they appear and to the inclusion of its report in Part IV.
- 15.8 Kilburn & Strode has given and not withdrawn its written consent to the inclusion of references to its name herein in the form and context in which they appear and to the inclusion of its report in Part IV.
- 15.9 PA Strategy Partners Ltd has given and not withdrawn its written consent to the inclusion of references to its name herein in the form and context in which they appear and to the inclusion of its report in Part III.
- 15.10 KPMG LLP has given and not withdrawn its written consent to the inclusion of references to its name herein in the form and context in which they appear and to the inclusion of its reports in Part V.
- 15.11 Panmure Gordon & Co has given and not withdrawn its written consent to the inclusion in this document of references to its names in the form and context in which it appears.
- 15.12 It is expected that definitive share certificates will be dispatched by hand or first class post by 27 July 2005.
- 15.13 Save as set out in paragraph 11 of Part I, "Current trading and prospects for the Group", there has been no significant change in the trading or financial position of the Group since 31 December 2004, the date to which the last audited consolidated accounts of the Company were prepared.
- 15.14 Save as set out in paragraphs 9(d) and 9(e) of this Part VI of this document no person (other than a professional adviser referred to in this document or trade suppliers or customers dealing with members of the Group) has:
- (a) received directly or indirectly, from any member of the Group within the 12 months preceding the Company's application for Admission; or
  - (b) entered into contractual arrangements (not otherwise disclosed in this document) to receive directly or indirectly, from any member of the Group on or after Admission, any of the following:
    - (i) fees totalling £10,000 or more;
    - (ii) securities in the Company with a value of £10,000 or more calculated by reference to the Placing Price; or
    - (iii) any other benefit with a value of £10,000 or more at the date of Admission.
- 15.15 Save as disclosed in this document, there are no investments in progress of the Group which are or may be significant.

- 15.16 Save as disclosed in Part I of this document, the Directors are unaware of any exceptional factors which have influenced the Group's recent activities.
- 15.17 Save as disclosed in this document, the Directors are not aware of any patents or other intellectual property rights, licences, industrial, commercial or financial contracts or new manufacturing processes which are or may be of fundamental importance to the Group's business.
- 15.18 Moneys received from potential placees in respect of applications for Placing Shares will be held by the Company's solicitors, Hammonds. The Company has issued Hammonds with an irrevocable instruction that if Admission does not occur on or before 19 August 2005 to return such monies together with interest thereon to the accounts of the transferees as soon as reasonably practicable at the transferee's risk.
- 15.19 There are no arrangements in place under which further dividends are to be waived or agreed to be waived.

## **16. Documents available for inspection**

Copies of the following documents will be made available for inspection at the offices of Hammonds, 7 Devonshire Square, Cutlers Gardens, London EC2M 4YH during normal business hours on any weekday (Saturdays and public holidays excepted) for the period commencing from the date of this document until at least one month after the date of Admission:

- 16.1 the Memorandum and new Articles of Association of the Company;
- 16.2 the reports produced by the Company's reporting accountants on the Company and on Oxonica Materials and its subsidiary undertakings reproduced in Part V of this document;
- 16.3 the Directors' service contracts and letters of appointment referred to in paragraph 6 above;
- 16.4 the material contracts referred to in paragraph 9 above;
- 16.5 the written consents referred to in paragraph 15 above;
- 16.6 the audited consolidated accounts of Oxonica Materials and its subsidiary undertakings for the three years ended 31 December 2004; and
- 16.7 the rules of the Share Option Schemes.

## **17. Availability of Admission Document**

Copies of this Admission Document are available free of charge from the offices of Hammonds, 7 Devonshire Square, Cutlers Gardens, London EC2M 4YH during normal business hours on any weekday (Saturdays and public holidays excepted) from the date of this document until at least one month after the date of Admission.

Dated: 14 July 2005

## DEFINITIONS

The following definitions apply throughout this document, unless the context requires otherwise:

“Act”	the Companies Act 1985, as amended
“Admission”	admission of the Ordinary Shares, issued and to be issued pursuant to the Placing, to AIM becoming effective in accordance with paragraph 16.6 of Chapter 16 of the rules of the London Stock Exchange
“Admission Agreement”	the conditional agreement dated 14 July 2005 between Oxonica, the Directors, the Senior Employees and Panmure Gordon & Co, details of which are set out in paragraph 9(a) of Part VI of this document.
“AIM”	AIM, a market operated by the London Stock Exchange
“Albemarle”	Albemarle Corporation
“ANO”	Advanced Nanotechnology Limited
“anti-oxidants”	chemicals that act to scavenge oxidising species
“BASF”	BASF Aktiengesellschaft
“Beiersdorf”	Beiersdorf AG
“Boots”	Boots Group plc
“Boots 5 Star (ultra)”	a rating system developed by Boots Group plc for rating UVA protection, with 5 being the highest rate of protection
“Ciba”	Ciba Speciality Chemicals Inc
“CNG”	compressed natural gas
“Combined Code”	The Combined Code on Corporate Governance published in July 2003 by the Financial Reporting Council
“CREST”	the relevant system (as defined in the Regulations) in respect of which CRESTCo Limited is the Operator (as defined in the Regulations)
“Directors” or “Board”	the board of directors of Oxonica whose names are set out on page 3
“DTI”	Department of Trade & Industry
“EPA” or “US EPA”	the United States Environmental Protection Agency
“Estée Lauder”	Estée Lauder Inc
“ExxonMobil”	ExxonMobil Corporation
“FDA”	Food and Drug Administration
“free radicals”	highly reactive chemical species that are implicated in the damage of cellular processes
“FSMA”	The Financial Services and Markets Act 2000
“GE”	The General Electric Company
“Great Lakes”	Great Lakes Chemical Corporation
“Hanjoo”	Hanjoo C&C Co. Ltd
“IBM”	International Business Machine Corporation
“ICI”	Imperial Chemical Industries plc
“IRR”	internal rate of return
“IP”	intellectual property

“Kinetin”	a synthetic plant growth hormone that has been formulated to allow the appearance and texture of skin to be better preserved
“Locked-in Shareholders”	means BASF, Trivest VCT plc, Foresight Technology VCT Plc, Richard Farleigh, Stagecoach Bus Holdings Limited and certain other Shareholders
“London Stock Exchange”	London Stock Exchange plc
“LPG”	liquid petroleum gas
“Mitsui”	Mitsui & Co. Ltd
“Octel”	Octel Corp.
“Official List”	the official list of the UK Listing Authority
“Ordinary Shares”	ordinary shares of 1p each in the capital of Oxonica
“Oxonica Energy”	Oxonica Energy Limited, a wholly owned subsidiary of the Company
“Oxonica Group” or “Group”	Oxonica and its subsidiary undertakings or, where the context requires in relation to the period prior to 16 June 2005, Oxonica Materials and its subsidiary undertakings
“Oxonica Healthcare”	the healthcare division of Oxonica Materials
“Oxonica Materials”	Oxonica Materials Limited
“Oxonica” or “Company”	Oxonica plc
“Oxonica Singapore”	Oxonica Singapore PTE Limited
“Panmure Gordon & Co”	Panmure Gordon (UK) Limited, a company incorporated in England and Wales with registered number 4915201
“photo-oxidative damage”	damage caused by oxidising free radicals resulting from the rays of the sun
“Placing”	the placing of 8,658,796 new Ordinary Shares at the Placing Price as described in this document
“Placing Price”	95.8 pence per new Ordinary Share
“Placing Shares”	the 8,658,796 new Ordinary Shares issued pursuant to the Placing and Placing Share shall be construed accordingly
“Placing Shareholders”	Richard Farleigh, Stagecoach Bus Holdings Limited and the other persons subscribing for the Placing Shares and those Shareholders converting their loans to the Group into Ordinary Shares
“Post-Admission Scheme”	The EMI Post-Admission Scheme and the Unapproved Post-Admission Scheme
“Pre-Admission Scheme”	The EMI Pre-Admission Scheme and the Unapproved Pre-Admission Scheme
“PSA”	PSA Peugeot Citroën
“PVC”	polyvinyl chloride
“Raychem”	a trading division of Tyco International Ltd
“R&D”	research & development
“Regulations”	The Uncertificated Securities Regulations 1995 (SI 1995/3272)
“Senior Employees”	Stuart Anderson, Dr. Barry Park and David Browning
“SMART”	a Department of Trade & Industry Sponsorship Scheme for research and development in small and medium-sized businesses

“Share Option Schemes”	the Pre-Admission Scheme, the EMI Post-Admission Scheme and the Unapproved Post-Admission Scheme
“Shareholders”	holders of Ordinary Shares
“Shell”	The Shell Transport and Trading Company, plc
“SPF”	sun protection factor
“Stagecoach”	Stagecoach Group Plc, a leading international transport operator
“The EMI-Pre Admission Scheme”	the pre-Admission enterprise management incentive scheme known as the Oxonica plc Enterprise Management Incentive Share Option Scheme as applied to Replacement Options a summary of which is set out at paragraph 10 of Part VI
“The Unapproved Pre-Admission Scheme”	the pre-Admission unapproved share option scheme known as the Oxonica plc Unapproved Share Option Scheme as applied to Replacement Options a summary of which is set out at paragraph 10 of Part VI
“The EMI Post-Admission Scheme”	the post-Admission enterprise management incentive scheme known as the Oxonica plc Enterprise Management Incentive Share Option Scheme 2005 a summary of which is set out at paragraph 10 of Part VI
“The Unapproved Post-Admission Scheme”	the post-Admission unapproved share option scheme known as the Oxonica plc Unapproved Share Option Scheme 2005 a summary of which is set out at paragraph 10 of Part VI
“UK”	the United Kingdom of Great Britain and Northern Ireland
“Umicore”	n.v. Umicore s.a.
“United Kingdom Listing Authority” or “UKLA”	the Financial Services Authority, acting through the United Kingdom Listing Authority, in its capacity as the competent authority for the purposes of Part VI of FSMA
“US” or “USA” or “United States”	United States of America, its territories and possessions, any state of the United States and the District of Columbia
“UV”	ultraviolet
“UVA”	ultraviolet – A
“UVB”	ultraviolet – B
“\$”	United States dollars