

Oxford University Begbroke Science Park

Where Industry and Science Meet

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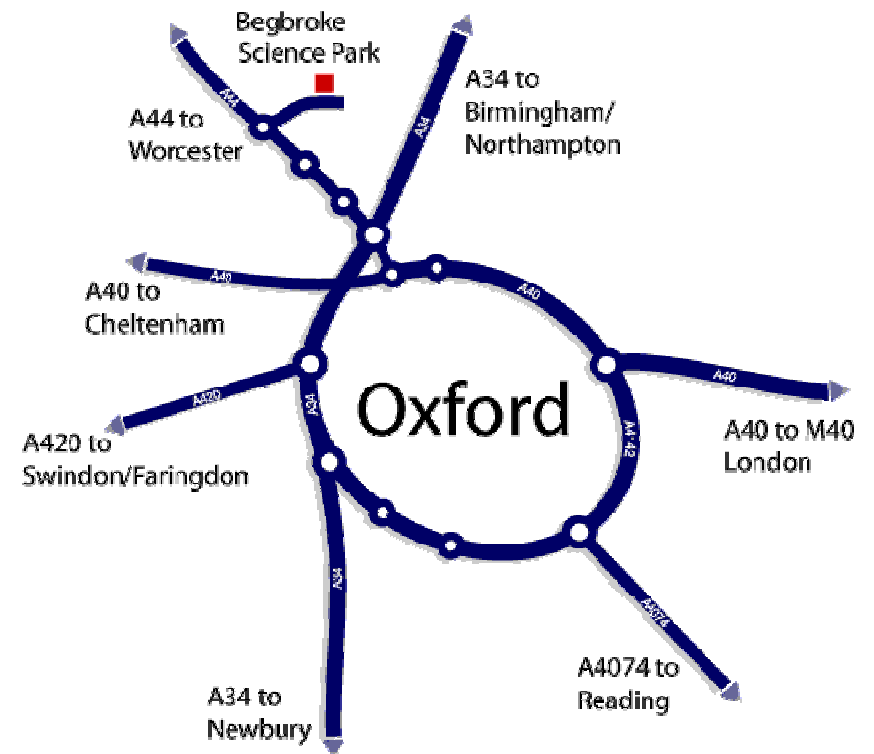
www.materials.ox.ac.uk & www.begbrokenano.com



Begbroke's mission is....

.....to create and sustain an environment in which the interaction of Research, Business and Learning constantly produce new synergies – and to translate these synergies into innovations to meet today's industrial challenges.

Centrally located



Easy access by air, rail & road

Department of Materials lead



- ◆ Purchased 1998 with 7500m² lab/office space
- ◆ Being expanded to 13,000 m²
- ◆ Investment ~£35M (2005) from University, JIF, SRIF, Industry sources
- ◆ Prof Peter Dobson, Academic Director (2002)

6 miles north of Oxford
city centre and main concentration of
the University & Colleges



Begbroke 20th September 2005



Centre for Innovation and Enterprise

- ◆ Rentable space for spin-outs and start-ups
 - e.g. Oxford Nanolabs, Chiralabs, Oxford Medical Diagnostics
- ◆ Mixed space
 - Wet and dry laboratories and office and meeting space



The Institute of Advanced Technology

- ◆ Multidisciplinary research centres
 - Energy
 - Nanotechnology
 - Sustainable use of materials



Begbroke – the incubator

- ◆ Direct access to current leading edge research
- ◆ Entrepreneurial culture
 - Synergistic activities leading to critical mass
- ◆ Specialist support services
 - People and skills
 - Knowledge base
 - Equipment
- ◆ Supportive environment

The Begbroke development offers the perfect interface with the University of Oxford and provides a pleasant and easily accessible location for both employees and customers”

Dr Kevin Matthews, CEO Oxonica

Practical start-up

- ◆ Enterprise Fellowship Scheme
- ◆ Oxford University Business Plan Competition
- ◆ ISIS Innovation
 - Europe's leading exploiter of university generated IP
- ◆ Knowledge Transfer Networks and Partnerships
- ◆ Experienced Technology Translators
- ◆ Access to one of the world's leading knowledge based institutions

Companies at Begbroke

- ◆ APEM
- ◆ Chiralabs
- ◆ CrystalMaker Software
- ◆ Kirkhouse Trust
- ◆ Kriston Technology
- ◆ Oxford Gene Technology IP (OGT)
- ◆ Oxford Medical Diagnostics
- ◆ Oxford Nanolabs
- ◆ OxLoc
- ◆ Oxonica
- ◆ Plasma Antennas
- ◆ Prolysis
- ◆ Rochford Medical
- ◆ WheelRight

Oxford Innovation at Begbroke

Oxford Innovation Centre at Begbroke

- ◆ One of 11 innovation centres managed by Oxford Innovation
- ◆ Works with entrepreneurs and innovators to provide the services they need, including:
 - office and laboratory space
 - fund raising through
 - Business Angel networks
 - R&D Grants service, and
 - Investment readiness programmes
- ◆ Business networks and clusters including
 - OxMedia Network
 - Diagnox, and
 - the Innovation Networking Club

Case studies

◆ Oxonica

- Founded in 1999 as a spin-out company from nanomaterials research at Oxford University
- IP based company

◆ Oxford Biosensors

- Formed in 2000 based on novel technology from the University of Oxford
- Incubated at Begbroke
- Manufacturing company

◆ Hardide

- Implanted into Begbroke from Russia in 2000
- Provides coating services/products

Oxonica – an IP company

- ◆ Leading international nanotechnology company
- ◆ Technology originally from Oxford University
- ◆ Multisector businesses
 - Energy
 - Healthcare
 - Security
 - Materials

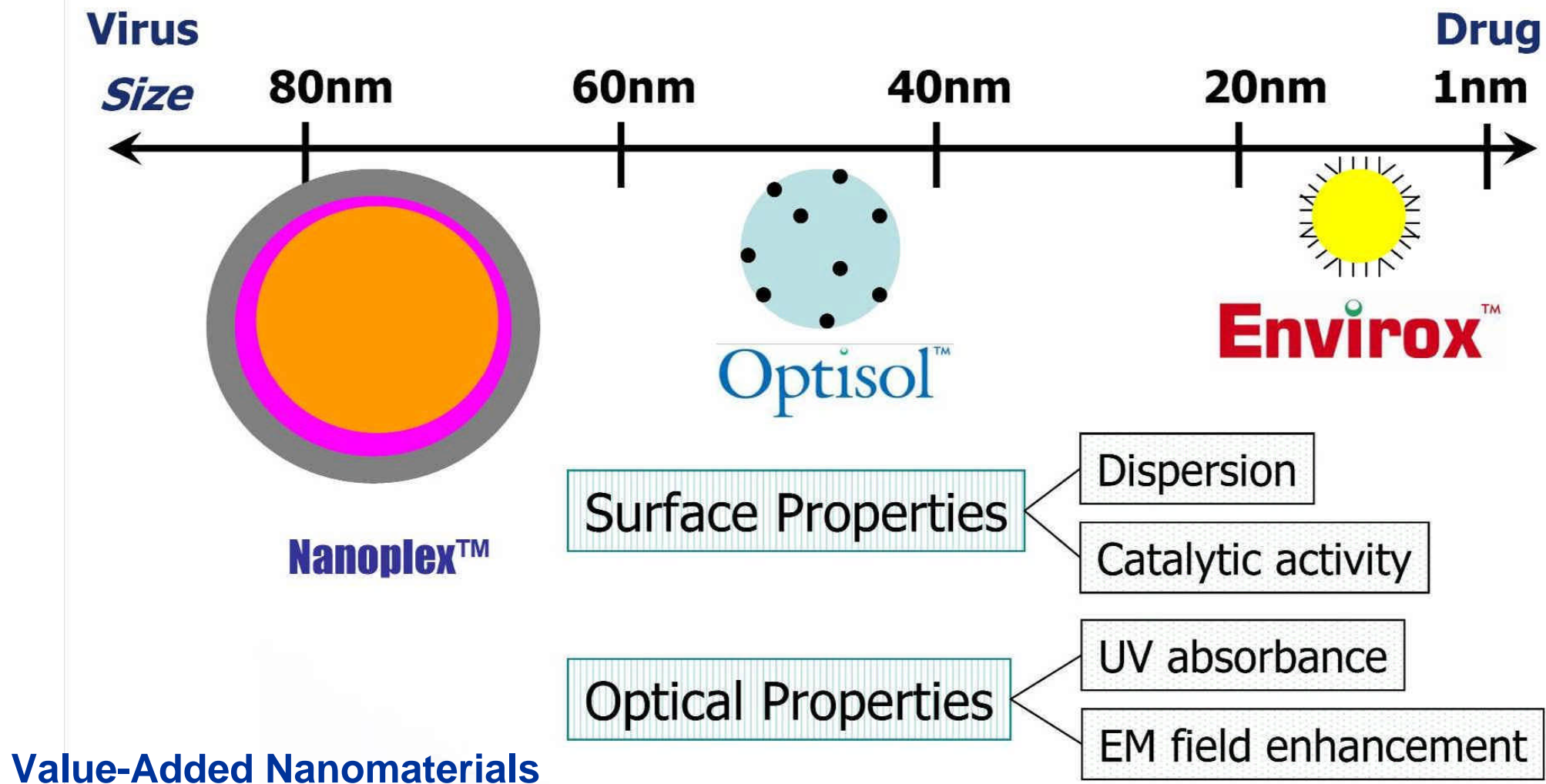


“To build a leading, international group by developing innovative commercial solutions for global markets using Oxonica’s expertise in the design and application of nanomaterials”

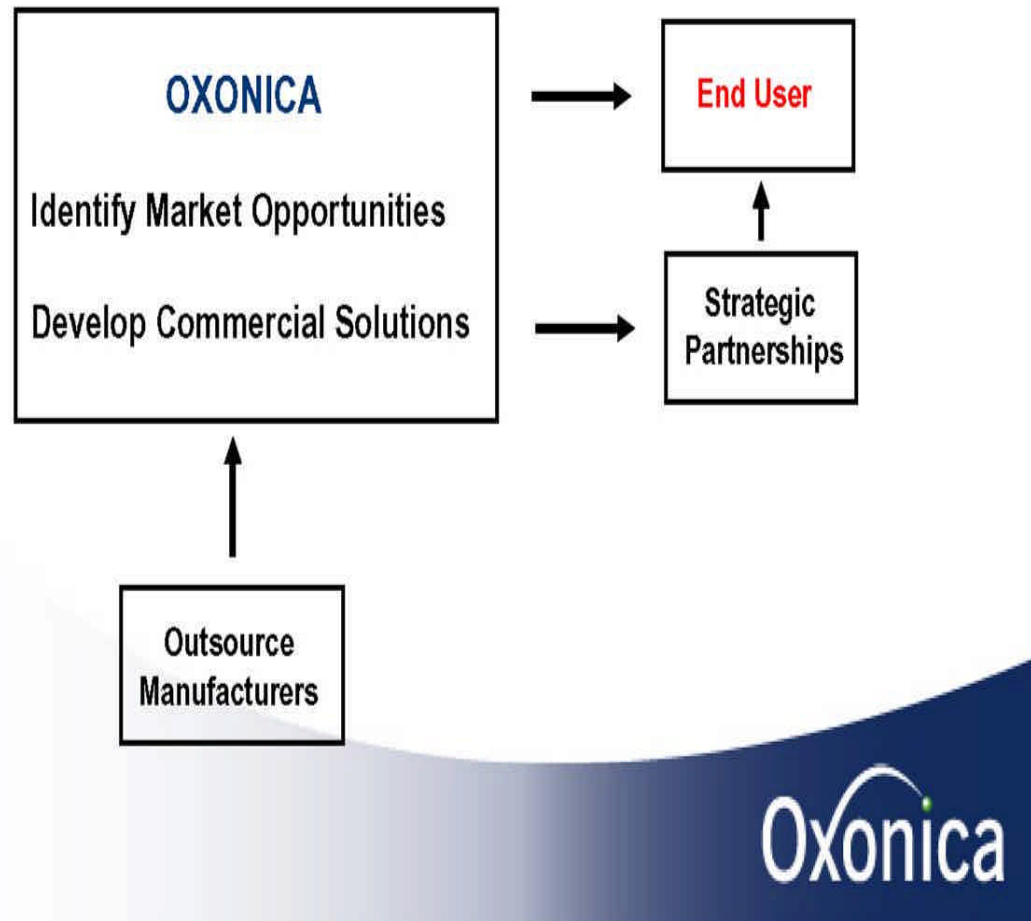
Oxonica timeline

- ◆ 1999 spun out from Oxford University
 - Phosphor quantum dots
- ◆ 2001 Kevin Mathews appointed CEO
- ◆ 2003 – Envirox™ fuel catalyst launched
- ◆ 2004 - Optisol™ innovative UV absorber launched
- ◆ 2005 – Oxonica floats on AIM
 - Market capitalisation ca. £35m
- ◆ 2006 – Oxonica acquires Nanoplex, leading US nanotech company
 - Supply agreement for Envirox™ with Petrol Ofisi, ca. £8-12m /year sales
 - Optisol™ successfully incorporated into Boots, Tesco and Coreana products
 - Licence agreement with Becton Dickinson for Nanoplex™

Oxonica's Technology

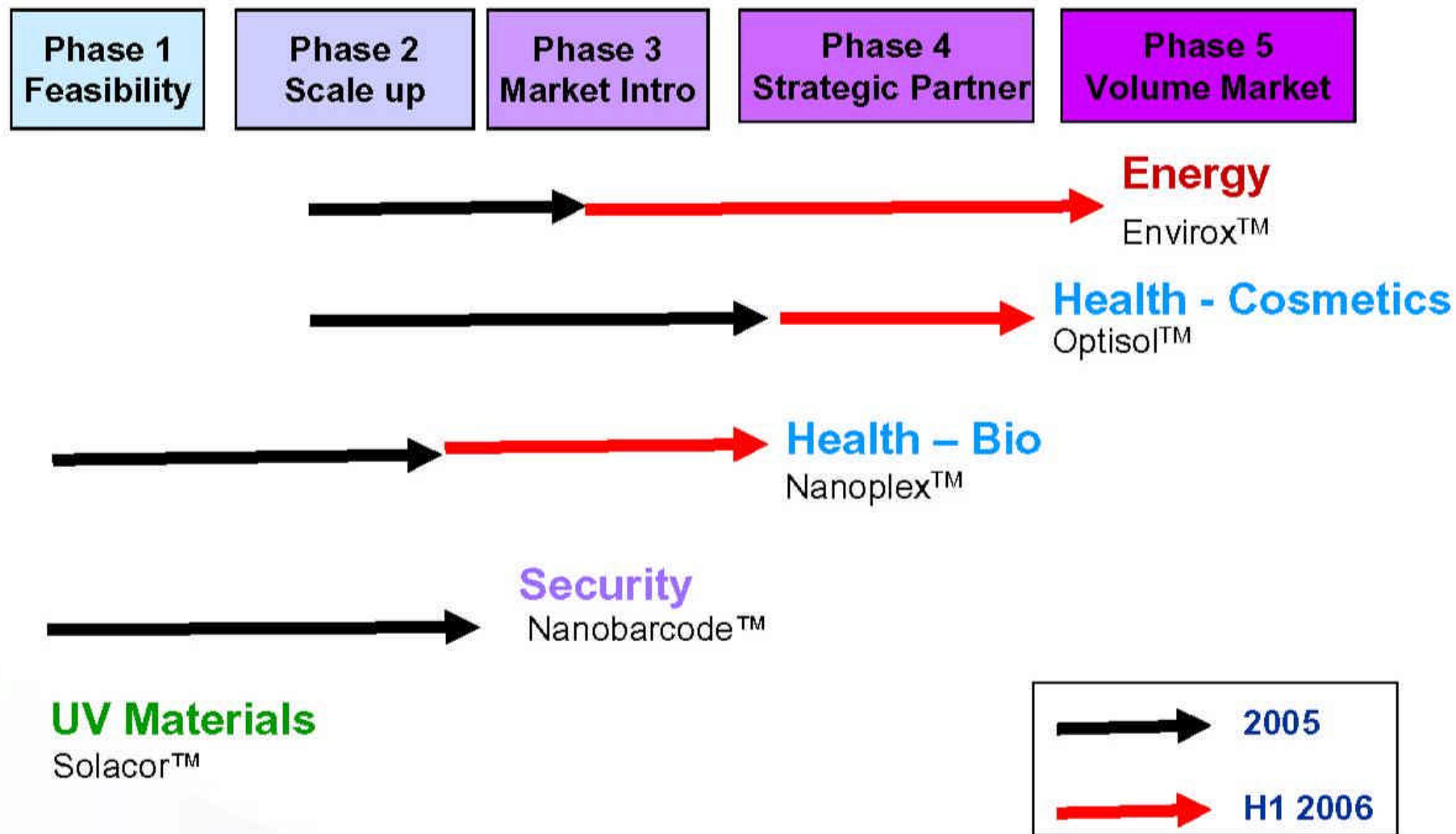


Leveraged Business Model



- ◆ Develop patented product applications
 - 50 patent families, 211 national applications
- ◆ Outsource manufacturing
- ◆ Access major markets directly and through strategic partnerships with global brands

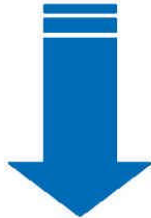
Typical commercial development



Envirox™

IDENTIFIED PROBLEM:

- **High fuel costs**
- **Environmental pressures**



OXONICA'S SOLUTION:

ENVIROX™

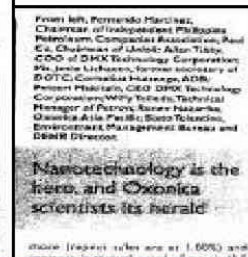
Fuel borne nanocatalyst

Diesel fuel savings: 5-11%

Reduced emissions including CO₂ and particulates**

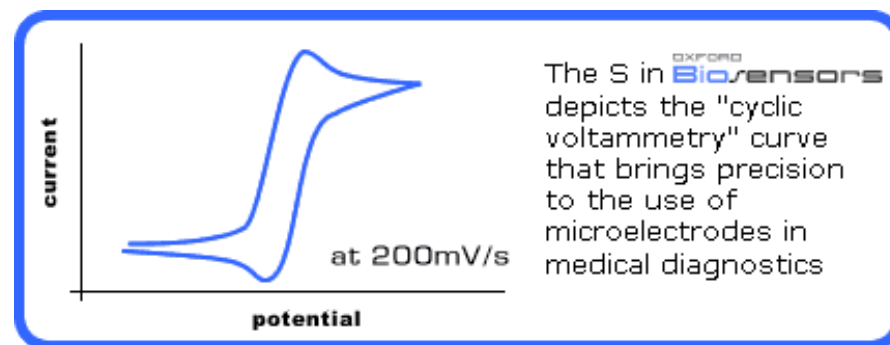
Petrol Ofisi deal results in revenue of \$12.7m in H2006

Major clean technology – potential to save 2,000 tonnes of CO2 emissions



Oxford Biosensors - manufacturing

- ◆ Formed in 2000 as a spin out from Oxford University
- ◆ Electrochemical biosensors
 - Easy to use disposable strip
 - Point of care use
 - Multi-parameter sensing
- ◆ Strong IP portfolio, with more than 10 patents under application
- ◆ Three key technologies:
 - microelectrodes, novel enzyme systems and detection systems.
 - microelectrodes to reduce capacitance and increase speed and signal to noise ratio.
 - Designed from the start for manufacturability, reliability and economic production



Oxford Biosensors timeline

- ◆ August 2000, incorporated from spin out of University of Oxford
 - Establish research and development labs at Begbroke
- ◆ June 2003, awarded development grant
- ◆ August 2003, secure innovation award
- ◆ November 2003, move to industrial park
 - Less than 1 mile from Begbroke
 - Capacity for manufacture of 25 million electrodes / year
- ◆ December 2004, sign exclusive deal with Pfizer
 - lipid profile that measures total cholesterol, HDL/LDL and triglyceride levels

Hardide plc – a service company

- ◆ The leading global innovator and provider of ultra-hard tungsten carbide coatings
- ◆ Nano-structured pore-free coating uniquely combining abrasion, erosion, friction and chemical resistant properties
- ◆ Wide range of applications
 - Oil and Gas
 - Aerospace
 - Valves
 - Pumps
 - High-end engineering



Hardide timeline

- ◆ 2000 implanted into Begbroke Science Park
 - CVD Technology demonstrated at Moscow State University
 - Financed by Flintstone Management Services Limited
- ◆ 2003 moved to industrial site
 - Manufacturing facilities at Bicester, 6 miles north of Begbroke
 - Maintain close links with Begbroke – analytical facilities
- ◆ 2004 first commercial revenues secured
- ◆ April 2005 listed on the London Stock Exchange's Alternative Investment Market (AIM) with £1.75m capitalisation
- ◆ 2006 global manufacturing
 - \$5 m staged investment
 - Coatings plant opened in Houston, Texas, USA opened in September 2006

Planned Future Developments

- ◆ Business - focused nanotechnology activities
- ◆ New energy technologies, hydrogen/solar
- ◆ Sustainable materials technologies, aero/auto
- ◆ Environmental management
- ◆ Bio-medical engineering cluster

*Focus to be solution driven problem solving
utilising interdisciplinary teams*

Why does Begbroke work ?

The mix is right !

- ◆ People with experience and first hand knowledge of developing and exploiting technology
- ◆ Critical mass of similar minded companies and research groups
- ◆ Facilities and a real will to make it happen
- ◆ Centrally located and easy access
- ◆ Direct access to one of the world's leading academic institutions
 - People, facilities and ideas