

Materials KTN Forward Strategy 2009 - 2012

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- Knowledge exchange events
- Collaboration on key projects

Vision

To bring together the materials supply chain to improve industrial innovation and global competitiveness of UK businesses

- Stimulating the demand by business for materials research and technology, and its exploitation
- Integrating design and materials knowledge to accelerate wealth creation
- Enabling greater responsiveness of the research base to the economy
- Helping to sustain UK excellence in materials for the benefit of society
- Encouraging more frequent and easy communication between business and the science and engineering base
- Ensuring smaller businesses have access to the best minds, equipment and funding opportunities

Sainsbury review – what should we learn?

Knowledge Transfer Networks

Accelerating business innovation:

A Technology Strategy Board programme

- Help the UK materials industry to be globally competitive
- Support the Technology Strategy Board to make strategic investments in high impact opportunities
- Provide mechanisms to meet aspirations in innovation through HMG procurement
- Support Technology Strategy Board development of proof of concept funding and small business research initiative (SBRI)

Materials in the UK

- Materials are central to all areas of technological and economic activity
- The UK has capacity to develop and exploit materials technology
- The size of the global market opportunity is very large
- Crucial in meeting key societal challenges
 - Climate change
 - Energy availability
 - Raw materials scarcity
 - Sustainable development / greening the economy
 - Healthcare
 - Security and Defence, include fighting crime

Opportunities for Materials

- Design can be restricted by a lack of materials understanding
- New materials provide new product opportunities
- Nuclear materials – know-how needs to be rebuilt
- Energy efficiency e.g. light-weighting and insulation
- Manufacturing efficiency – energy, use of materials
- End of life, re-use, recycle, life cycle analysis
- Understanding and exploiting nanomaterials responsibly
- Materials for assisted living
- More applications for natural materials
- Security – sensors, armour, defence systems, crime prevention

Barriers - 1

- **Impact of globalisation on UK manufacturing**
 - Move from resource based approaches to knowledge based ones
 - Gain market share through increased functionality of materials and products
- **Move from single use, mass products to higher value added, mass customised items**
 - Flexible manufacturing processes
 - Facilitating change in business processes and models
 - Increased automation
 - Fast product development cycles
 - Predictable performance
 - Monitoring and rapid adoption of emerging technologies
 - Greater understanding of market needs

Barriers - 2

- **Retaining and building key skills of engineers and technicians**
 - Supporting EPSRC CASE awards
 - Developing secondments and KTPs
 - Training to increase the uptake of materials and design knowledge
- **End users want components to solve critical challenges in demanding applications:**
 - Extended life of products
 - Decreased emissions and energy usage
 - Decreased maintenance
 - Increased performance capabilities e.g. power, weight, reliability
 - Reduced costs

The Materials KTN

- **Supporting the Materials Community**
 - Direct advice to companies and researchers
 - Signposting to technology, science or training providers
 - Signposting and support to gain funding for development
- **Promoting Innovation and Development**
 - Design support and access to materials library
 - Project development
 - SPARK awards for SMEs
 - Consortium building for EU Framework and Technology Programmes
 - Project management where appropriate
- **Knowledge Exchange**
 - Analysis of strategic technology areas and emerging markets
 - Overseas missions
 - Dissemination of information from KTN state-of-art reviews
 - Promotion of KTPs
 - Promoting materials standards

Target Areas

Knowledge Transfer Networks

Accelerating business innovation:

A Technology Strategy Board programme

Materials pillars

- **Metals**
- **Polymers**
- **Composites**
- **Smart materials**
- **Ceramics**
- **Natural materials**
- **Technical textiles**

Applications

- **Design**
- **Transport**
- **Energy**
- **Crime**
- **Security and Defence**
- **Health**
- **Construction**
- **Packaging**

Underpinning

- **Raw materials**
- **Sustainable design**
- **Modelling & Simulation**
- **Materials Characterisation and NDT**

International and Investment

- **Materials Innovation/Knowledge Transfer Fellowship**
 - Short term secondments abroad and to help government procurement
- **EU framework specialist**
- **Innovation Investment Network**
 - **Build Mat KTN wide investment network**
 - **Enable technology commercialisation**
 - **Innovation advisory service**
 - **Market opportunity analysis**
- **Super-spark: engage RDA and company support, cash goes to research provider**
- **Materials KTN Business Plan Prize**

Working with other KTNs

Working with other KTNs and Knowledge networks, e.g

- Innovits
- Low C and fuel cells KTN
- Nanotechnology KTN
- Aerospace and Defence KTN
- Modern Built Environment KTN
- Healthcare Technologies KTN
- Resource Efficiency KTN
- Photonics KTN
- UK displays and lighting KTN
- Electronic enabled products KTN
- Food Processing KTN
- Sensors KTN
- Chemistry KTN
- Environment KTN