

**Technology Strategy Board**

Driving Innovation



# Technology-Inspired Collaborative Research and Development

**OCTOBER 2010 COMPETITION FOR FUNDING**



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### Summary

The Technology Strategy Board proposes to stimulate innovation across its key enabling technology areas to help ensure that UK businesses are well-equipped to respond to the challenges presented by the economic downturn and slow recovery. We have allocated up to £18m to invest in collaborative research and development projects.

The core technology areas covered by this competition are:

- Advanced Materials
- Biosciences
- Electronics, Photonics and Electrical Systems
- High Value Manufacturing
- Information and Communications Technology
- Nanotechnology.

### Background

The Technology Strategy Board is keen to support business-oriented innovation across a broad range of technologies that fall within the six areas identified above.

In launching this competition, we want to support key enabling technologies that often underpin successful innovations. The investment is designed to stimulate projects inspired by new discoveries and breakthroughs, including ideas that are yet to find applications in a recognised market or business sector.

This complements our wide range of 'Challenge-led' investments designed to help address society's most pressing needs in areas such as health, energy and low carbon.

This competition follows on from the 'Technology-inspired feasibility studies' competition that we supported between December 2009 and March 2010. However, it is important to note that:

- Participation in the 'Technology-inspired feasibility studies' competition is not a pre-requisite for this competition
- Applications for this competition will be assessed on their own merit, regardless of whether the project technology was subject to a prior feasibility study

### Scope

The scope of this competition is aligned with that of the 'Technology-inspired feasibility studies', excepting a number of specific technology areas which will be addressed in other Technology Strategy Board competitions during 2010.

All projects must contain a significant element of technology innovation. This competition will focus on projects where recent technological discoveries or breakthroughs have inspired people to innovate in a context of significant technology risk, demanding highly skilled, multi-disciplinary resources, working in a collaborative project team.

We are especially keen to encourage innovation in new enabling technologies that have the potential to span different disciplines and may not be directly driven by society's challenges. An example is innovations that lead to new technology platforms, or 'springboards', from which the potential commercial benefits could be realised across multiple applications. The scope includes taking a known technology into new application areas where significant technical challenges need to be overcome. Projects will generally be at the applied research stage leading to (and possibly including some) experimental development. We expect most projects to be starting from around the 'proof of concept' maturity level and be developing towards 'demonstrator' level (technology readiness levels three to six).

An element of basic research, usually involving university participation, may be supported provided it is clearly shown to be an essential part of the innovation project.

The projects need to match one or more of the technology areas below and must align closely with the Technology Strategy Board's strategies in the respective areas. See [www.innovateuk.org](http://www.innovateuk.org) under Publications.

### Technology areas

Proposals must fall into one of the following technology areas. Where a proposal cuts across more than one area, the application should indicate the predominant area.

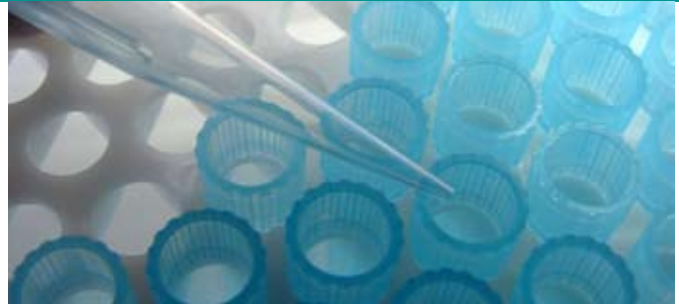
#### Advanced Materials

Development and application of advanced materials for:

- Secure, clean and affordable energy supply, distribution and use – both fixed and mobile sources in the energy, transport and construction industries
- Sustainability in relation to transport, construction and the 'reduce, reuse and recycle' agenda, including packaging and materials for carbon capture
- High value markets, including technologies for healthcare, the creative industries, defence and security.

#### Biosciences

- Advanced biofuels
  - Upstream technologies for the processing of sustainable feedstocks
  - Novel production technologies
  - Downstream technologies to increase recovery and ensure quality
- Agriculture and food
  - Increasing yields of agricultural feedstocks
  - Novel foods and processes that improve nutrition, quality or sustainability
  - Safety, traceability and authenticity through the food chain.



## Electronics, Photonics and Electrical Systems

- Control systems and power engineering – reducing electricity consumption in the built environment, industrial processes or transport including lighting, photovoltaics, power conversion and management
- Data and image acquisition – developing systems based on sensing and imaging capabilities including location sensing, location services and synchronisation, item tracking, sensors and sensor networks
- Systems design and integration – embedded systems, robotics and autonomous systems, and verification and testing of computing system designs including industrial lasers.

## High Value Manufacturing

- Designing and developing innovative products or systems that offer improved performance, functionality, reliability, service life and reduced environmental impact
- Developing production technologies that can create high value through novel processes, advanced product manufacture, formulation, resource efficiency or greater product customisation, or that create environmental sustainability through efficient disposal, recycling or re-manufacture
- Developing service solutions that complement product offerings by adding value before, during or after manufacture
- Value systems associated with providing a lifetime service around the manufactured product or manufacturing process.

## Information and Communications Technology

We are particularly interested in receiving proposals regarding:

- Engineering of ICT systems – means to configure new and complex end-to-end ICT-based systems that are fit for purpose

The following topics are also in scope:

- Data-driven systems – techniques and tools to build and deploy whole solutions for continuous and reliable data collection in complex environments, to serve demanding data needs
- Intelligent systems – ways to design and exploit autonomous and/or autonomic systems that perform safely in dynamic environments, but excluding ways to extract value from collected data and information
- User-centric systems – methodologies and tools to ensure that ICT systems align with user needs, values and preferences.

## Nanotechnology

Application of nanoscale technologies and integration of technologies into products for one or more of the following topics:

- Living with environmental change – environmental sustainability; water supply; monitoring of physical structures and waste streams; secure, clean and affordable energy supply, distribution and use
- Living with an ageing and growing population – healthcare, including drug

delivery and discovery; diagnostics and imaging; prevention, diagnosis, treatment and management of disease, implants; and surface cleanliness

- Living in an intelligent, connected, modern world – safety and security systems; intelligent transport systems; increased user interaction with products; and next generation computing and entertainment systems.

Proposals in this area, especially those related to the application of nanoscale materials, should consider responsible development initiatives to safeguard against any potential risks or harm to people and/or the environment.

The following technology areas are **out of scope**:

- Industrial biotechnology for the production of chemicals
- Genome sequencing
- Crop protection technologies
- Plastic and printed electronics
- Communications – contributing to the cost-effective development and/or deployment of next-generation access, or the development of local high frequency wireless networks
- Nanotechnology for organic/dye sensitized based solar energy harvesting
- ICT systems for harnessing large and diverse sources of data.

Details of our other competitions may be found at: <http://www.innovateuk.org/news/events/competitionannouncements.ashx>

## Key dates

Competition opens	<b>12 October 2010</b>
Stage 1 – Expressions of interest deadline Successful applicants notified	<b>Noon 18 November 2010</b> <b>10 December 2010</b>
Stage 2 – Competition opens for invited applications Deadline for receipt of full applications	<b>13 December 2010</b> <b>27 January 2011</b>
Offer letters posted	<b>25 February 2011</b>
Conditional contracts issued	<b>mid-March 2011</b>



## Funding allocation and application process

The Technology Strategy Board has allocated up to £18m to fund collaborative research and development projects that address the technical challenges and inspire and demonstrate new technologies that align with the scope described above.

- We are primarily looking to fund applied research projects attracting 50% public funding
- We expect to invest between £250k and £500k in each project, although projects outside this range will be considered
- Projects will normally last two to three years and should deliver a tangible outcome such as a system or process demonstrator
- All applications will be assessed on individual merit in accordance with the normal Technology Strategy Board process. However, in order to ensure coverage of the whole technology scope, we reserve the right to apply a 'portfolio' approach, subject to meeting the required quality threshold.

This is a two-stage competition that will open on **12 October 2010** and expressions of interest (EOI) must be submitted by noon on **18 November 2010**. The second stage for invited applications will open on **13 December 2010** and close on **27 January 2011**. We expect to be placing grant offer letters in March to enable projects to get started by May.

A 'Guidance for Applicants' document, to be published on the opening date of the competition, will explain the application process in detail as well as provide full information on the funding levels and eligible costs. Before that date a range of documents and example forms are available for reference at [www.innovateuk.org](http://www.innovateuk.org) under Competition.

An optional briefing will be held in London on **20 October 2010** to highlight the main features of the competition and explain the application process. We intend to make a film of the briefing available online for non-attendees.

## Further information

For more information about this and other competitions and details of how to register and apply, visit [www.innovateuk.org](http://www.innovateuk.org) under Competitions.

Competitions helpline:  
**0300 321 4357**

Email:  
[competitions@tsb.gov.uk](mailto:competitions@tsb.gov.uk)

## Publicity

The Technology Strategy Board frequently publicises the results of competitions and this includes engagement with the media. All applicants will be given a chance during the competition process to opt out of any publicity. Willing applicants will be asked to provide an agreed form of words for use in publicity material. E-mail [pressoffice@tsb.gov.uk](mailto:pressoffice@tsb.gov.uk) with any queries.

*The Technology Strategy Board is a business-led executive non-departmental public body, established by the Government. Its role is to promote and support research into, and development and exploitation of, technology and innovation for the benefit of UK business, in order to increase economic growth and improve quality of life.*

*Collaborative research and development is part of the Government's Solutions for Business portfolio.*

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