European Union
European Regional
Development Fund

AiPT
Aston Institute of Photonic Technologies

AIMR
Aston Institute of
Materials Research

Aston University

EnablingTechnologies
& Innovation Competences Challenge Project

Call for Applications
Enabling Technologies and Innovation Competencies Challenge Project
Key Enabling Technologies & Laser Technology Application for SMEs

A call is now open for applications for Enabling Technologies and Innovation Competencies Challenge project part-funded by the European Regional Development Fund (ERDF).

This Call consists of two streams:

i. Generic Key Enabling Technologies (KETs) stream, which offers expertise and support to SMEs in development of new innovative products and services using the following technologies:

- photonics
- advanced materials
- micro and nanoelectronics
- nanotechnology
- industrial biotechnology
- advanced manufacturing technologies.

ii. Industrial Application of Laser Technology stream that is focused on exploring together with small & medium businesses

- how existing laser technology can help SMEs to improve existing products, services or processes;
- application of laser technology to new areas.

A laser is a device that emits a light beam with a high brightness (much brighter than natural radiation sources like lamps) that can be used in many instruments and for various purposes. Laser technology has been widely adopted in the variety of industry sectors and applications. High brightness allows tight focusing of a laser beam to obtain a high optical intensity sufficient to change physical properties of materials (including their destruction). Lasers can have a broad or a very narrow optical spectrum (e.g., optical supercontinuum sources and single-frequency lasers). This allows a flexible exploitation of the light coherent properties in different sensing systems (e.g. optical coherence tomography, gyroscopes). In addition, laser sources with a broad spectrum become a powerful spectroscopic tool allowing detection of various substances at molecular level. In combination with new technologies - artificial intelligence, Internet of Things, Big Data and other - there are even wider opportunities. Below are a few examples from the vast variety of laser applications. This is by no means a comprehensive list.

- Manufacturing: laser cutting, welding, marking and engraving
- Construction and Transportation : LIDARs (stands for "light detection and ranging") - an active form of remote sensing for support of engineering planning, transportation corridor mapping and change detection. LIDARs measure distance to a target by illuminating the target with laser light and detecting the reflected light. LIDARs allow to build a 3D picture of the surrounding space and objects in it, and are extensively used in cartography and other various mapping tasks for automotive, maritime, and airspace navigation (including autonomous cars, airplanes, boats, etc.).
- Food/Drink Manufacturing: Raman and mid-IR spectroscopy for detection and analysis of organic and inorganic materials and substances
- Telecoms: data transmission with optical fibers
- Life Science: diode lasers for non-invasive examination, diagnostics and treatment

More information about lasers and a variety of laser industrial applications can be found on the internet, for example here https://www.spilasers.com/laser-processing-applications/.

This project is designed to stimulate innovation in small/medium businesses and help businesses grow. ETICC project offers to small & medium businesses:

1. support and knowledge of KETs and laser technology from a team of academics from Aston Institute of Photonic Technologies;
2. use of university facilities - laboratories and equipment;
3. assistance in development of new products, services and processes.

Support is available to:
Existing Small to Medium sized Enterprises (SMEs) located in or moving into the Greater Birmingham & Solihull Local Enterprise Partnership area interested in application of laser technology, with the particular focus on (but not limited to) the following sectors: life sciences, digital and creative, low carbon and advanced manufacturing.

- Existing Small to Medium sized Enterprises (SMEs) located in or moving into the Black Country Local Enterprise Partnership areas interested in application of laser technology, with the particular focus on (but not limited to) the following sectors: transport technologies (including aerospace and automotive), building technologies/construction, advanced manufacturing /advanced engineering, environmental technologies, and business services.
- Small number of companies from outside the above regions might be accepted onto the programme, if spaces in this call are not taken up by the companies located in GBS and Black Country LEPs .

Application Deadline:
This call opens on 13th February 2020 and closes on 30th April 2020.

Support available:
The project is looking to select 26 companies from the applicants with the technology innovation projects most suitable to be assisted by this project. Companies are offered a minimum of 12 hours of free-of-charge support through one-on-one consultancy with academics from Aston Institute of Photonic Technologies and Aston Institute of Materials Research. This may also include use of relevant laboratories and equipment.

Application procedure:
Applications have to include a filled-in application form, an SME declaration, a State Aid declaration and a description of the problem or technology the company is working on.

Evaluation criteria
Project proposals will be evaluated based on the following criteria:
- What are the commercial benefits of the challenge: i.e. what is the likelihood that a good outcome will result in improved processes, improved turnover and gross value added for the company? It is for the company-applicant to make this argument.
- Novelty of the idea: is this a challenge that is novel and has not already been resolved elsewhere? Innovative ideas will be prioritised
- Practicality of delivering a solution within the timescale of the project: solution can be developed within few months and will be completed before the project practical completion date of 31 July 2021
- Is Enabling Technology & Innovation Competencies Challenge project is an appropriate vehicle, or should the company be referred to one of other ESIF funded projects or activities available in the region.

Activities *eligible* for funding:
- Development of new technology for SMEs to improve existing products
- Development of new technology for SMEs leading to new products
- Development of a prototype device, system, elements at the SME request
- Development of the prototype product
- Assistance with preparation of joint projects for SME's R&D funding

Activities *ineligible* for funding:
- Development of technology that would require year(s) of R&D work
- Development of new devices, systems and elements that would require year(s) of R&D work
- Development of new products that would require year(s) of R&D work
- Development of new technology that would beyond the scope of enabling competences and technologies offered by the project

ETICC Project
Enabling Technologies and Innovation Competencies Challenge project, part-funded by the European Regional Development Fund (ERDF) is aiming to support small and medium businesses using Key Enabling Technologies (KETs) for development of new, innovative products and services.

To receive further information about Enabling Technologies and Innovation Competencies Challenge Project and to apply for the project please send a brief description of idea/technology you are working on, along with the contact details, to eticc@aston.ac.uk and the project team will get back to you.

More information about Enabling Technologies and Innovation Competencies Challenge Project can be found on the project website www.enablingtechnologies.uk .