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European funding boost for Electron Microscopy Centre

The Plymouth Electron Microscopy Centre (PEMC) is a collaboration between Plymouth University and multi-national company JEOL (UK) Ltd, and aims to establish a world class centre for materials characterisation and analysis in the city.

The facility has been jointly funded by the University, JEOL and a number of external sources, including a £579,960 grant from the European Regional Development Fund.

The new initiative, which will cost a total of around £1.3million over three years, will be based at the hugely successful microscopy centre on the University campus in the heart of Plymouth.

The team behind the project believes it could be of interest to around 1,000 firms within the South West's manufacturing sector.

Over the life of the project, they aim to provide more than 120 business assists, create around 50 new jobs and attract around 40 firms to business networks.

Dr Roy Moate, Manager of the PEMC, said: **“The existing centre works across a range of activities within the University, spanning teaching, research and industrial support and has become a valuable regional resource. It creates a successful interface for business engagement, knowledge transfer and innovation support. A major role for the centre is to carry out detailed materials characterisation studies requiring high quality imaging and analysis data. The new facility builds on the existing capabilities and expertise linking directly with the University's Failure Analysis Research Group, enabling us to expand our work with regional businesses in metallurgical assessment, corrosion investigation, fatigue life and fracture toughness testing.”**

Electron microscopy (EM) is a key technology for businesses operating across a wide range of sectors including advanced engineering, bio-medical, environmental technologies, and food and marine.

Scanning electron microscopes (SEMs) use a beam of high-energy electrons to image samples at a significantly higher magnification than possible with traditional optical techniques.

It allows for more accurate and precise analysis of both natural and synthetic materials, allowing users to:

- investigate the causes and effects of failures, defects and fatigue;
- Develop new and improved products, processes and materials;
- Enhance quality control and monitoring.

Despite being a relatively mature technology, EM is generally used by larger firms and the University-led initiative aims to open it up to a whole new market.

The project will see three state-of-the-art EM machines being installed on the University campus. The first is already in place, with the second due by the end of March and the third later in the year, when a series of awareness events will be held to promote their benefits to businesses across the region.

Larry Stoter, regional sales manager for equipment suppliers JEOL (UK) Ltd, said: **“As a company, we like to build long-standing relationships with our customers, and our link with Plymouth University is a perfect example of that. You will not find another facility like this anywhere west of Bristol, and our tie-up will involve additional training for academics and students, to enable them to use the new machines to their full potential. But we will also be helping the University reach out to local businesses, providing training and support to enable small businesses across the South West to grow.”**

Colin Skellett, Deputy Chairman of the Local Management Committee for the South West Competitiveness European Regional Development Fund Programme, said: **“The Programme is investing European funding in a number of initiatives to help businesses in the South West improve their productivity by exploiting the benefits of new technology. The Plymouth Electron Microscopy Centre offers exciting opportunities for small and medium enterprises to access highly sophisticated imaging equipment together with the expertise to help them use it to analyse issues which may be affecting business performance.”**