The University of Birmingham enters business partnership with Johnson Matthey Colour Technologies

Posted on Friday 1st October 2010

The University of Birmingham has recently teamed up with Johnson Matthey Colour Technologies, a market leader in high performance materials, to investigate techniques in the characterisation of ceramic pigments.

The collaboration was developed through a Science City Research Alliance (SCRA) project looking at Next Generation Advanced Materials. This £10 million pound project is part of a major capital investment under the Birmingham Science City initiative by Advantage West Midlands and the European Regional Development Fund in the research infrastructure of the West Midlands region, uniting the Universities of Birmingham and Warwick in the new SCRA alliance.

Johnson Matthey Colour Technologies exploited the University's newly acquired aberration-corrected JEOL 2100F STEM/EELS microscope to gain structural and chemical information, at the atomic scale, relating to the colour characteristics of several ceramic pigments. The work also served to test the limits of the STEM/EELS technique for structural characterisation and elemental discrimination of ceramic powders.

The new Scanning Transmission Electron Microscope and associated Electron Energy Loss Spectrometer were acquired as part of the capital infrastructure investment from the AM1 project with funding support from the West Midlands regional development agency, Advantage West Midlands (AWM), and the European Regional Development Agency (ERDF).

Part of the Precious Metal Products Division of the Johnson Matthey plc group, Colour Technologies is a market leader in the supply of high-performance materials to the electronic, automotive glass, tableware, advanced ceramics, glass and aerospace markets. They set the industry standard in the provision of automotive glass enamels, ceramic colours, precious metal inks and advanced ceramic materials.

Professor Richard Palmer, Nanoscale Physics Research Laboratory, University of Birmingham said "We were able to demonstrate that aberration-corrected scanning transmission electron microscopy can play a big role in the characterization of micro- or nano- scale industrial products through this successful collaboration with Johnson Matthey Colour Technologies".

Paul Cartlidge, Marketing Manager, Johnson Matthey Colour Technologies, said "The transition electron microscope images have revealed a level of complexity we never expected to see in these products. It appears our process produces quite distinct and different nano-scale structures. It's absolutely fascinating; this insight should help us plan for the next generation of products."

Notes to editors:

About Birmingham Science City

Birmingham Science City is a region-wide partnership of public sector, businesses and the research base, which is facilitating the use of science and technology to improve the quality of life and prosperity of the West Midlands. Funded by Advantage West Midlands, Birmingham Science City's aim is to create strategies to exploit centres of world-class scientific research, by developing relevant activities for sustainable economic and social benefit. **www.birminghamsciencecity.co.uk (http://www.birminghamsciencecity.co.uk)**

About The Science City Research alliance (SCRA)

Part of the Birmingham Science City Initiative, SCRA is a collaboration between the University of Birmingham and Warwick University providing world-leading research and knowledge support across three major platforms: advanced materials, energy and translational medicine.

For further information contact University Press Office on 0121 414 6029.

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