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The logo for the Ceramics and Composites Laboratory (CCL) at The University of Sheffield. It features the letters 'CCL' in a large, bold, black sans-serif font. The letters are centered between two horizontal yellow bars.

Ceramics and Composites Laboratory
The University of Sheffield

Out and about

John Sharp presented the 48th Mellor Memorial Lecture at the Conference on Cement and Concrete Science held at Royal Holloway, University of London on 15-16 September 2005. The lecture was to have been given at the Ceramics Convention organised by the Institute of Materials, Minerals and Mining in April 2004, but was postponed because of ill health. The title of John's lecture was "Surely we know all about cement, don't we?" Previous Mellor lecturers include W E S Turner, J White, R W Douglas, J P Roberts and R G Newton, all of whom were Professors in the University of Sheffield.

In September **Frank Jones** attended the 2nd International Conference on Interfaces and Interphases in multicomponent materials. Frank gave the Plueddemann Award lecture entitled "Designing interfaces and interphases for optimum fibre composites". This lecture was the response to the award of the Plueddemann Prize for Excellence in Research into Composite Interfaces. The Award is sponsored by the Dow Corning company in memory of one of the greatest contributors to interface science in composite materials and adhesion. Dr Ed Plueddemann was one of the early pioneers of the use of silane coupling agents in glass fibre composite materials. To this day, his developments have continued and are major components of all sizings used in glass fibre reinforced materials. The silanes and adhesion promoters have also been extended into conventional adhesives and polymers. The Plueddemann Award is the most prestigious award in the world for research work in this discipline. At this meeting **Xiaoming Liu** presented a poster-paper "Selective adsorption of mixed organo silanes with differing reacting groups on E-glass surfaces"; **Fang Ming Zhao** presented a poster-paper entitled "Quantifying the effect of shrinkage and thermal stresses and stress transfer in single fibre composites using phase stepping photoelasticity"; **Zheng Liu** presented a poster-paper entitled "The effect of plasma polymer formed interface on the fracture of fibre composite materials".

In September **Frank Jones** attended the EPSRC/NSF International Workshop on Advances in Multi-scale Modelling of Composite Materials and Systems and Components" in Monterey, USA where he presented an invited lecture on "The prediction of relevant matrix properties for composite performance using group interaction modelling".

Publications

D Pasero, S de Souza, N Reeves and AR West, "Oxygen content and electrochemical activity of LiCoMnO₄-delta" J. Mater. Chem., 2005, 15(41), 4435.

H Zheng, GDCS De Gyorgyfalva, IM Reaney "Microstructure and microwave properties of CaTiO₃-LaGaO₃ solid solutions" J. Mater. Sci., 40 (19): 5207-5214, (2005).

J Liu, Y Zheng, YP Liao, DC Apperley, G Ungar and PV Wright. "High lithium conductivities in weakly-ionophilic low-dimensional block copolymer electrolytes" Electrochimica Acta 50 (19): 3815-3826 (2005).

V Cech, J Vanek, AA Goruppa and FR Jones. "RF-power-controlled young's modulus of plasma-polymerized organosilicon films" J. Mater. Sci. 40 (18): 5099-5102 (2005)

CJ McConville, WE Lee "Microstructural development on firing illite and smectite clays compared with that in kaolinite" J. Am. Ceram. Soc. 88 (8): 2267-2276 (2005)

Ming Li, Antonio Feteira, and Derek C. Sinclair, Origin of the high permittivity in (La_{0.4}Ba_{0.4}Ca_{0.2})(Mn_{0.4}Ti_{0.6})O₃ ceramics, J. Appl. Phys. 98, (2005),

New CCL members

Welcome to the following new CCL members:

- Peter Bailey, who will be working with Simon Hayes and Russell Hand on "Smart composite materials using chalcogenide glass fibres"
- Oliver Hannant, who will be working with Russell Hand, Paul Bingham and Sue Forder (Sheffield Hallam) on "Structural studies of vitrified wastes"
- James Schofield, who will be working with Russell Hand and Paul Bingham on "Vitrification of chloride containing radioactive wastes"
- Andrew Donovan, who will be working with Derek Sinclair on "Bi-based oxide conductors"
- Matthew Ferrarelli, who will be working with Derek Sinclair and Tony West on "Defect chemistry of CaCu₃Ti₄O₁₂"
- Cheng Cheng Wang, who will be working with Frank Jones on "Adhesion of Glass Fibres to Polymers"
- Timothy Swait, who will be working with Frank Jones on "Effect of interfaces on compression properties of composites"
- Yang Liu, who will be working with Tony West on "Effects of oxygen content variation in electroceramics"
- Le Ma, who will be working with Mark Rainforth on "The wear behaviour of ceramics for hip prosthetics using AFM and TM"
- Mehdi Mirsaneh, who will be working as a KTP Associate with Ian Reaney and Sarantel on "Glass ceramics for antenna applications"
- Piers Anderson, who will be working as a KTP Associate with Ian Reaney and Ilika on "PbO free functional thin films"

I hope that you will all join me in welcoming them to the CCL.

EPSRC Regional Academic Seminars

EPSRC will be holding a series of regional academic seminars this winter and the following spring. The first two will be held in Edinburgh (3rd November) and London (24th November). These events will include a presentation from Professor John O'Reilly, Chief Executive of EPSRC, an open forum question and answer session and then sessions on peer review and the grant application process. There will be tips on writing effective grant proposals.

The spring events are to be held in Belfast (10th February) and Nottingham (16th February). These seminars will have the same schedule except that there will be

the additional opportunity to attend a session on full economic costing; implications and changes.

For more information on these seminars and to download the application form visit the following page of the EPSRC website:

<http://www.epsrc.ac.uk/AboutEPSRC/CorporateEvents/RegionalAcademicSeminars/default.htm>

White Rose Studentships 2006

This years White Rose Studentships call has been announced. The scheme supports a number of research networks each of which is allocated three studentships with the students working in related areas. Each studentship has two supervisors the principal at the lead institute and the co-supervisor at the partner institute. Each university should act as lead on one studentship and partner at another e.g. Leeds/Sheffield, York/Leeds, Sheffield/York thus creating a network. One of the 6 supervisors has to act as the network leader.

In 2006 four networks will be funded, one in each of four subject categories. The Physical Sciences and Engineering category is the most relevant for the CCL and it will be considering proposals on the following two themes, "Nanoscale Science and Technology" and "Environmental Engineering". The deadline for proposals is the 28th November.

This could be a great way to strengthen existing collaborations and build new ones. Further information can be obtained from the White Rose website:

<http://www.york.ac.uk/admin/gso/wrose/wrbids.htm>

Polyphase and Composite Materials Summer School

A Marie Curie Summer School on knowledge based materials - polyphase and composite materials is being organised for August 2006 in Alvdalen, Sweden.

The 10 day summer school will feature sessions on:

- multidisciplinary materials science
- phase boundaries in composite materials
- materials characterisation
- processing of composite materials
- careers in science
- modelling of microstructure and texture
- applications and properties of composite materials

The EU will support the full registration fees and accommodation costs, as well as actual travel cost up to 350 euros for eligible participants. To be eligible you must have a degree that allows you to start doctoral studies and less than 10 years experience from the date that you started your PhD. For non eligible participants registration is 500 euros and accommodation and meals will cost 850 euros.

For further information visit the Knowledge Based Materials website.

<http://www.materialsknowledge.org/>

Free membership of learned societies

If your PhD is supported by the EPSRC you are able to obtain free membership of one of a selection of learned societies. The societies you can choose from include the Institute of Materials, Minerals and Mining and the Institute of Physics. To find out what you have to do to get this free membership visit the EPSRC website:

<http://www.epsrc.ac.uk/postgraduate/training/informationforstudents/freemembershipofselectedlearnedsocietiesforepsrcstudents.htm>

PhD Success

Congratulations to **Kenneth J Norton Berry** who has been examined and recommended to receive the award of PhD. Kenneth's thesis was entitled Hydrogen Behaviour of Some Refractory Oxides and Binary and Ternary Oxide Mixtures (supervisor Bill Lee).

Best Wishes

Helen Fletcher

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