



An Important New Award for 2009:

The FEMS Materials Innovation Prize

At a meeting of the FEMS Executive Committee last year, it was decided that FEMS ought to have an award for innovation in the world of materials.

Immediate action was implemented to rectify this omission by founding the FEMS Materials Innovation Prize for distinguished scientists or engineers to recognise outstanding contributions to technological development and innova-

tion in materials science and engineering.

Rules for the Materials Innovation Prize were drawn up by the FEMS Awards Selection Committee under the chairmanship of Prof. George Kaptay of the University of Miskolc in Hungary. These included the criteria to be used in selecting the prize-winner. It was agreed that particular emphasis would be placed on the quality of the contribution to the field, which

would have to be exceptional with regard to the degree of innovation and market potential, as reflected in patents, licenses and other contracts between the nominee's institute and industry, spin-offs, and both publications and invited talks. As indicators of the importance of the innovation it was agreed that the following factors would be taken into account for selecting the award recipient:

- Economic contribution;

- Environmental contribution; and
- Contribution to quality of life.

It was announced that the prize would consist of a special new medal and the FEMS Secretary was given the responsibility for coming up with something suitable. With the help of Miss Casey Rafferty, a designer at the Institute of Materials, Minerals and Mining in London the idea of incorporating a rising sun to symbolise



The FEMS Materials Innovation Prize

the dawning of an innovative concept was developed. Five variants on this theme were proposed and of these, the one shown here was selected by the FEMS Executive Committee at its most recent meeting in London on 30th April.

First winner of the new prize:

Professor Derek J. Fray

FEMS is proud to announce that the first winner of its new Materials Innovation Prize is Derek Fray, Director of Research and Emeritus Professor of Materials Chemistry in the Department of Materials Science and Metallurgy at the University of Cambridge.

Derek Fray studied Metallurgy at Imperial College, London University and went on to obtain a PhD from a thesis entitled "The Conductance of Metal Salts at Constant Volume". He began

his career as an Assistant Professor of Metallurgy at Massachusetts Institute of Technology for three years. He then returned to the UK as a Group Leader in the Research Department of Imperial Smelting Corporation at Avonmouth, Bristol. Three years later he returned to the University of Cambridge as a lecturer in the Department of Materials Science and Technology, becoming Director of Studies in Materials Science and Metallurgy, Fitzwilliam College, in 1978. He moved

to the University of Leeds in 1991 as Professor of Mineral Engineering and Head of the Department of Mining and Materials Engineering.

Five years later he again returned to the Department of Materials Science and Metallurgy at the University of Cambridge, as Professor of Materials Chemistry, and Head of Department from 2001 to 2006.

During his career he has published more than 300 papers and been the inventor of approximately 180 patents.

Professor Fray has many notable technical achievements, including development of the Fray-Farthing-Chen process for

the production of titanium by the electro-de-oxidation of solid TiO_2 in molten calcium chloride. This promises to revolutionise titanium production and greatly reduce its cost compared with material produced by the traditional Kroll process which needs many large electrolytic cells for regenerating the magnesium that is used as a reducing agent.

The presentation of the award to Professor Fray will take place, together with that of the other FEMS Awards during the opening ceremony of EUROMAT 2009 in Glasgow on Sunday 6th September. Following the presentation, Professor Fray



Derek Fray

will give a talk entitled "Examples of Synergy Leading to Innovations in Materials Science". This will explain that innovation is only successful when new ideas are put into practice and this requires three things: the initial idea to solve a problem; experimental results to show that it works; and, hopefully, a partner to invest in order to make it a success

FEMS Lecturers for 2009-2010

The FEMS Lecturer Award for Excellence in Materials Science and Engineering encourages selected young materials scientists (below the age of 40) who have contributed significantly to a recently emerging topic of materials science and engineering to present lectures in Europe as “ambassadors” of the materials community.



Lyubov Belova

Lyubov Belova was born in Moscow, in 1974. Her PhD was awarded in 2000 for a thesis on “Colossal Magneto-resistance Materials”. Since 2001 she has been employed at the Royal Institute of Technology in Stockholm, Sweden, where as an associate professor she leads the “Engineering Materials Physics” group in the Department

of Materials Science and Engineering. The group is mainly involved in the design of new functional materials for magneto-electronic and spintronics applications. Her FEMS Lecture (in Session C64 at EUROMAT 2009) is entitled “Inkjet technology for flexible patterning of functional materials”. InkJets operate at room temperature in ambient conditions and are compatible with many materials from ceramic and magnetic nanoparticles to carbon nanotubes and proteins. Recent developments include direct patterning of oxides (e.g. ZnO, MgO) for optics and magneto-optic components. One targeted application is UV sensing.



Carlo Mapelli

Carlo Mapelli is a native of Inzago, Italy. Born in 1973, he obtained his PhD from the Department of Mechanics at Politecnico di Torino in January 2003 for research concerned with the plastic deformation of metals. Since 2001, Carlo has worked in the Department of Mechanics at Politecnico di Milano, where he is an associate

professor. His FEMS Lecture (in Session C12) is entitled “New opportunities for improving the formability of duplex stainless steels through specifically designed thermo-mechanical processes”. This describes ways of improving the poor formability of duplex stainless steels based on laboratory rolling trials at various temperatures under symmetric and asymmetric conditions. The mechanical properties, microstructural features and texture characteristics have been defined for each condition and finite element analysis has clarified the stress and strain fields induced in the rolled product. Promising results have been obtained.

The FEMS Materials Science and Technology Prize for 2009

This prize is awarded to young European materials scientists or engineers in recognition of a significant contribution to a field of Materials Science and Engineering.

The award finances a lecture tour to three different European countries (funded by FEMS up to a limit of 1500 euros) and a prize of 1500 euros, which is payable on completion of the tour. This year there are two FEMS Lecturers.

The prize consists of a certificate and a selection of books from the highly-regarded WILEY-VCH catalogue of Materials Science and Technology publications. The winner of this year’s prize is Dr. Ludger Weber who was born in Baden, Switzerland, in 1969. He

earned his materials science and engineering degree and a technical science doctorate from ETH in Zurich in 1994 and 1997, respectively, since when he has worked in the Laboratory of Mechanical Metallurgy at EPFL in Lausanne. He has been

involved in many aspects of metal matrix composite processing, characterisation and modelling, with special emphasis on high temperature capillarity and lately on composites with highest thermal conductivity and tailored coefficient of thermal expansion.



Ludger Weber

Dr. Weber has authored or co-authored over 40 publications in peer-reviewed scientific journals. His lecture will be presented in Session B17 on “Metal matrix composites reinforced with nano-sized reinforcements” at EUROMAT 2009.

DATES FOR YOUR DIARY

The Ukrainian Materials Research Society (UMRS) is organising **HighMat Tech 2009** in Kiev, Ukraine, on 19-23 October 2009. For further information, contact the Conference Secretariat: chern@ipms.kiev.ua

The Institute of Materials, Minerals and Mining (IOMMM) is organising **Natural Fibres '09** at its headquarters in London on 14-15 December 2009. For further details visit the Conference Website: www.iom3.org/events/fibres

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FEMS news

Editorial Committee: Dr. P. McIntyre (IOMMM; Chairman), R. Kickuth. Managing editor: Rolf Kickuth. Production: Rubikon Agency, Germany. Please send comments and contributions to Paul.McIntyre@iom3.org. Publisher: FEMS, 1 Carlton House Terrace, London SW1Y 5DB, UK © FEMS September 2009

FEMS news

is available at the FEMS website (www.FEMS.org). It can be downloaded as a PDF file in screen resolution or as a ready-to-print PDF file. Thus FEMS news can be inserted in national materials science magazines.

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