

Member Society News - 06/2015

Welcome

Welcome to the second FEMS National Materials Member Society newsletter. It is their vector for communicating widely across Europe on current activities, new developments or conferences. FEMS branding is the EUROMAT Series and we look forward to meeting up again during EUROMAT 2015 and the Materials Weekend in Warsaw from September 19 to 24, 2015 which is organised by the Polish Materials Society PTM in collaboration with the Warsaw University of Technology, the venue of EUROMAT 2015. In addition to preparing the

run up to EUROMAT 2015, the first steps towards EUROMAT 2017 are being taken by the Hellenic Metallurgical Society HMS and the Hellenic Society for Science and Technology of Condensed Matter (HSSTCM) to organise the next EUROMAT conference in Thessaloniki, Greece. We hope you enjoy reading this newsletter and that it promotes networking between the Materials Societies in Europe.

*Yours, Margarethe Hofmann
FEMS President*

Portugal

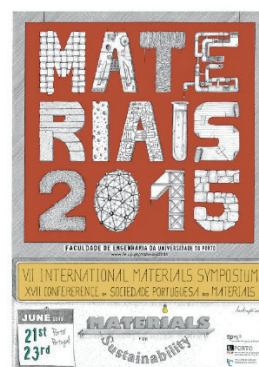
MATERIAIS 2015

XVII Congress of SPM and VII International Materials Symposium

MATERIAIS 2015 aims at examining relevant Materials areas with the purpose of promoting a better understanding of Materials' behaviour and applications as related to more efficient and sustainable forms of: energy production and storage; new biomedical uses; structural intelligent materials; efficient use of materials in buildings, transport, electronics, mechanics, materials and art, among others.

SPM-Sociedade Portuguesa de Materiais has active groups in all class of materials: metals, ceramics, pol-

ymers and composites. There will be oral presentations and poster sessions.



A career prize will be awarded by SPM for the first time this year, in order to recognize, encourage and promote excellence in research and development in the area of Materials in Portugal.

MATERIAIS 2015 will be held at Porto, on 21-23 June. More information at <http://paginas.fe.up.pt/~materiais2015/wd>

France

SF2M is creating a new thematic group: **Metallic additive manufacturing** supported both by industrial companies and academic research laboratories. The group will focus on metallurgical issues (powder influence, beam interaction), development and optimisation of metallic structures. It is open to international cooperation. Contact: guilhem.martin@simap.grenoble-inp.fr

The **National network of metallurgy** was launched last October and is hosted by SF2M. Its board was constituted with a President from industry (Marjorie Cavarroc, Safran) and a vice-President from academic research (Jean-Luc Bechade, CEA). The group first actions comprise thematic schools and classes online support, participation to European cluster EUREKA "Metallurgy

Europe”, demand for ESRF industrial applications... It is open to European initiatives and cooperation. Contact: RNM@sf2m.fr

Mapping the Future of Materials Science **A special symposium organised by SF2M, to be held** **September 7th, 8th and 9th 2015 in Sèvres**

In the past 60 years the subject of Materials Science has undergone a profound and rapid evolution. The basic concepts of traditional Metallurgy which encompassed the extraction of Metals from minerals and the utilisation and understanding of their properties as useful engineering materials have been quantified and broadened to an astonishing degree. Materials Science now includes a wide variety of metallic and non-metallic materials in which the structural and functional properties can be controlled and related directly to the needs of engineering design. In addition Materials Science contributes to the important socio-technological issues of Sustainability and Recyclability.

An important aspect of the evolution of Materials Science has been the development of data bases for both materials and processes which help in the optimal design of components and more recently the design of

new materials and material architectures. The optimisation of Material Selection and guided design of materials owes much to the concept of maps developed by Professor M.F.Ashby.

It is important from both a pedagogical viewpoint and from the viewpoint of developing clear synthesis of how the various crucial aspects of materials science are related to attempt to map the Future of Materials Science. A short Symposium based on the concepts developed in the Gordon Conferences of combining clear overviews of a topic and lively and challenging debate is an ideal format. Thus SF2M is organising a short Symposium on the topic of “Mapping the Future of Materials Science” which will include such topics as new views of structure property relationships, advances in microstructural analysis of metallic and non-metallic materials, structural and functional materials and their applications in new buildings, the crucial role of interfaces in materials, opportunities from new manufacturing methods and bio-inspired materials for the future. The meeting will start with an invited lecture by Professor Ashby. It will welcome students and provide many opportunities for discussion of student posters. Information: <http://www.sf2m.asso.fr/materialsfuture2015>

United Kingdom

IOM3 on the move

During the 2014 rent review for our London office, 1 Carlton House Terrace, the Crown Estate (IOM3 landlord) provided an offer to purchase the remaining portion of the Carlton House Terrace lease. The Institute Trustees carried out a detailed review of the proposal and reached a unanimous decision to surrender the lease and to seek an alternative London location. A vote by Council to acquire the freehold of an office building on Euston Road was approved and we have now formally completed this purchase.

Visit www.iom3.org/euston-road for further details.



Materials World – there’s an app for that

The Materials World magazine app was launched for smartphones and tablets on 2 April!

Visit <http://app.materialsworld.org> to view the short trailer and find out more.



New IOM3 website

Work on the new IOM3 website has been progressing rapidly over the last couple of months and you will see it in its new guise by April. We hope you will like its totally new look, clearer navigation and calls to action. The site will provide IOM3 with a platform for developing more interactive content for members in the future, will facilitate online joining for new members and allow current members to update their profile, contact data and preferences more easily than before.

RECENT and UPCOMING EVENTS – supported by FEMS **Rolls 2015**

22–24 April, Birmingham

Continuing the successful series of conferences on rolling mill rolls for metals processing. <http://bit.ly/1uOpVIt>

ICMAC 2015

24–25 June, Bristol

A forum for those interested in composites manufacturing, from the academic and industrial worlds.

<http://bit.ly/10QXTnf>

Parsons 2015

14–17 September, Loughborough

The 2015 conference will focus on the challenge of increased flexibility in thermal power plant, and industrial and aero gas turbines and generators, whilst maintaining high efficiency. <http://bit.ly/femsparsons>



The 4th **International Conference of Engineering Against Failure (ICEAF IV)** will be held in Skiathos, Greece on 24-26 June 2015. ICEAF IV is co-organized by

the Laboratory of Technology & Strength of Materials (LTSM) and the Hellenic Metallurgical Society (HMS), under the auspices of the *Federation of European Material Societies (FEMS)* and the *European Aeronautics Science Network (EASN)*.

ICEAF IV will be the fourth event of a biennial conference series, gathering high-level scientists and engineers from all over the world. The scope of the Conference is to attract interdisciplinary work dedicated to understanding the underlying physics of engineering failure, experimental and theoretical failure analysis, model the structural response with regard to local and global failure and structural design for preventing of engineering failure.

Information regarding ICEAF IV can be found at the official website of the conference:

http://ltsm.mead.upatras.gr/lab/lang_en/conference/view/6

REACH.OUT!



**MATERIALS
4 A SUSTAINABLE
FUTURE**

Advanced Materials are behind more than 70% of all technical innovations today. Have you wondered how would it be if the general public could realise this and supported

more our work? It seems that most of us find it hard to communicate the importance of our field to the people around us. Even t-shirt designers realise our weakness: 943 Facebook users "Like" a t-shirt with the message: "I am a Materials Engineer. I solve problems you don't know you have in ways you can't understand."

For this reason, the EU project STIMULATE is creating a free-to-use film and an educational game. These media products will be released soon and will be available in all EU languages; they will be great tools for the Materials Community's efforts to stimulate the general public's interest towards our field. The project wants also to en-

courage those of us that spend time in outreach activities and this is why one of its partners, the European Materials Research Society (EMRS) has set up a prestigious award (REACH.OUT!).

The Hellenic Society for the Science and Technology of Condensed Matter (HSSTCM) has been at the heart of this project since its very beginning and two members of its Administrative Board play key roles in it; this is why it is one of the first societies that will use these free products for its outreach activities. The HSSTCM aims to exploit them to stimulate the Greek public's attention towards Advanced Materials and to make people understand the relevance of our field to solving everyday problems. HSSTCM aims to make the Greek public realise that world-class work on new materials takes place all around the country by adding Greek labs on the project's map; by encouraging its members to use the project's free products for their outreach activities it hopes that it will uncover a world of unlimited possibilities in a country that desperately seeks for solutions. You can find more info at www.materialsfuture.eu, as well as ways of taking part.



IIMEC 2015

Summer School

Advanced Material Systems:
Experimentation & Modeling

The IIMEC 2015 Summer School in "Advanced Material Systems: Experimentation & Modeling" will be held July 13-18, 2015, in Thessaloniki Greece. The Summer School is organized by the Aristotle University of Thessaloniki in collaboration with Texas A&M. The scope is to familiarize students with the state of the art in advanced composite materials production, testing, constitutive law modeling, micromechanics and homogenization methods and theory. For more information visit the website: <http://iimec2015.web.auth.gr> or contact Prof. N. Michailidis (nmichail@eng.auth.gr)

WERKSTOFFWOCHE 2015 “WERKSTOFFE FÜR DIE ZUKUNFT” - MATERIALSWEEK 2015 “MATERIALS FOR THE FUTURE”



CONGRESS AND EXHIBITION FOR MATERIALS AND APPLICATIONS

The “Werkstoffwoche 2015” at Messe Dresden (www.messe-dresden.de), Dresden Germany is the central Congress in German language with an Industrial Exhibition for all application-oriented questions regarding the key topic “Materials for the future”. It presents new product and process developments and serves as a communication platform between materials experts from industry and science. At the same time, it is the ideal forum to discuss solutions for specific application issues or to find new partners from the industry for successful cooperation.

Whether energy, transport, communication, health or safety all megatrends of the future are based on the development of innovative materials. The national as

well as international success of the German economy is based directly and indirectly on the solutions of materials science and engineering. Because of this, innovative materials have an important share in the economic welfare of our society.

The exhibition “MATERIALS FOR THE FUTURE” offers ideal conditions for producers, processors and applicators of materials as well as for producers of machines, facilities and testing equipment to present their products. The exhibition thereby contributes to the understanding of the potential of innovative materials.

Details of the conference and exhibition and the overview of all symposia can be found on the congress homepage www.werkstoffwoche.de

CONGRESS CONTACT

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Czech Republic



Conference NANOCON'14 welcomed experts from 35 countries

Nanocon 14 provided an excellent opportunity to become acquainted with the results of research and development of nanomaterials in the Czech Republic and abroad as well as to meet the world's leading scientists working on nanotechnology. This event was organized by the Czech Society for New Materials and Technologies on 5 - 7, November 2014 in Brno, in cooperation with the Regional Centre of Advanced Technologies and Materials (RCPTM) at the Faculty of Science of Palacky University in Olomouc and with the company Tanger Ltd. During the three days of the conference almost 90 lectures on 5 different thematic areas of research and applications of nanomaterials were presented for four hundred participants from 35 countries of four continents. NANOCON'14 confirmed that it is the largest event of its kind organized in the Czech Republic and is the same time one of the largest conference in the field of nanotechnology in the Central European region.

The opening plenary lecture entitled “The Advent of



Mesoscopic Solar Cells”, was performed by Professor Michael Graetzel from the Ecole Polytechnique de Lausanne (Switzerland) and FEMS “Materials Innovation Price” winner 2011. Another plenary lecture was given by Professor Krzysztof Matyjaszewski from Carnegie Mellon University in Pittsburgh (U.S.A.) on “Nanstructured Functional Materials by Taming Radicals”, by which he outlined the wide range of applications of polymer materials for nanomaterials used in medical sector, cosmetics and electronics.

The Dr. Tasilo Prnka award (the promoter of nanotechnology in the Czech Republic), for the best lecture of

young scientists under the age of thirty three was received by Simona Steponkiene from the National Cancer Institute in Vilnius (Lithuania). Her lecture was focused on application of functionalized quantum dots in targeted cancer therapy. 250 posters were presented and the best poster was won by Alexander Kromka from the Institute of Physics Academy of Sciences (CZ) illustrating fabrication of 3D diamond membranes for microfluidic systems. Also amongst the top three poster was that of Fatma Yalcinkaya from the Textile Faculty of Technical University Liberec (CZ) describing production of antibacterial textile material obtained by weaving electro spun PVB/copper oxide nanocomposite fiber covered yarn.

"This year's conference underlined the dynamic increasing quality of research of nanomaterials in the Czech Republic and the emphasis on R&D to be finalized in

concrete industrial, medical or environmental applications. However plenty of great contributions from fundamental research have been presented in the conference. Such continuity is exactly what science needs," says Professor Radek Zboril', the director of the Regional Centre of Advanced Technologies and Materials and chairman of the conference. More than 40 percent of the participants came from abroad this year. Most foreign participants came from Russia, Slovakia, Poland and Germany and from distant countries, including U.S.A., China, Brazil, India or Japan.

We like to advertise NANOCON'15, to be held in Brno on October 14th to 16th, 2015 (www.nanocon.eu).

Shortened information given by Jirina Shrbená, Conference Program Committee Chair and Head of Nanosection of the CSNMT.

METAL 2015



The Czech Society for New Materials and Technologies partially cooperate on organizing of conferences, as one of its activities. One of them with a

long, almost 25-year tradition, is the international conference METAL. According to our information, there is no similar conference with such an extent and history in Central Europe.

The first, which was called "Metallurgical Symposium" was held in 1992. From the outset, Tanger Ltd. Has been the main organizer. VSB - the Technical University of Ostrava has participated in the preparation of the scientific content as guarantors of the conference and its individual sections.

The number of participants has gradually increased over

the years, and thematic focus was also changed in accordance with modern trends in the metallurgical industry. In 2011 conference moved to Brno and the Conference Proceedings was published in the Thomson Reuters - Web of Science/Web of Knowledge incl. CPCI database. Since 2012, the entire conference is fully conducted in English. It brought an unprecedented interest of lecturers. In 2014, 23th International Conference on Metallurgy and Materials conference was held in Brno, again and 432 persons from 26 countries participated at the conference. In 2015, the conference METAL 2015 will be held on June 3rd - 5th 2015 in Brno, Czech Republic, (www.Metal2015.com) and has the following thematic structure: SESSION A - Advanced Iron, Cast Iron and Steelmaking; SESSION B - Metal Forming; SESSION C - Steel Products - properties; SESSION D - Modern Trends in Surface Engineering; SESSION E - Non-Ferrous Metals and Alloys; SESSION F - Economics and Management of Metallurgical Production

Jiri Kliber, CSNMT and Tasilo Prnka, Tanger Ltd.

FEMS newsletter

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Czech Republic: Metal Science Society of the Czech Republic (MSS)

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Germany: Deutsche Gesellschaft für Materialkunde (DGM)

Germany: Deutscher Verband für Materialforschung und -prüfung (DVM)

Greece: The Hellenic Metallurgical Society (HMS)

Greece: Hellenic Society for the Science and Technology of Condensed Matter (HSSTCM)

Hungary: Hungarian Society of Materials Science (MAE, Magyar Anyagtudományi Egyesület)

Italy: Associazione Italiana di Metallurgia (AIM)

Italy: Associazione Italiana d'Ingegneria dei Materiali (AIMAT)

Italy: Associazione Italiana Compositi & A ni (Assocompositi)

Latvia: Latvian Materials Research Society (LMRS)

Lithuania: Lithuanian Materials Research Society (LtMRS)

Netherlands: Bond voor Materialenkennis (BvM)

Norway: Norsk Metallurgisk Selskap (NMS)

Poland: Polskie Towarzystwo Materialoznawcze (PTM)

Portugal: Sociedade Portuguesa de Materiais (SPM)

Serbia: Materials research Society of Serbia (Serbia-MRS)

Slovak Republic: Society for New Materials and Technologies in Slovakia (SNMTS)

Slovenia: Slovensko Društvo za Materiale (SDM)

Spain: Sociedad Española de Materiales (SOCIEMAT)

Sweden: Svenska Föreningen för Materialteknik (SFMT)

Switzerland: Schweizerischer Verband für Materialwissenschaft und Technologie (SVMT)

Ukraine: The Ukrainian Materials Research Society (U-MRS)

United Kingdom: Institute of Materials, Minerals and Mining (IOM3)

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