

## Newsletter - September 2017

### INTRODUCTION



Welcome to this special Anniversary edition of the FEMS newsletter which sees us marking the start of our 4th decade of activity by celebrating our 30th Anniversary

in 2017, in conjunction with one of the most successful EUROMAT conferences to date.

2017 has been one of the busiest years for FEMS and has seen us introduce a number of new initiatives focussed around the 5 year business plan. We have planned for the next two events in both the EUROMAT and Junior EUROMAT series. I visited Budapest earlier this year to sign the contract for the next Junior EUROMAT which will take place there in July 2018, further details on this event are included in this newsletter. We plan to develop both conferences in the future which will enhance and deliver even more value for money.

This week at EUROMAT sees the launch of the new FEMS website, new FEMS promotional materials including our new branded member benefit flyers, launch of the FEMS Alumni - this will help us maintain strong links with key individuals in the future. We have very active working groups developing new ideas at each meeting which helps us be more productive and deliver a whole range of new initiatives for the benefit of our extensive member network. Our last EC meeting in Stockholm in May to visit the venue of a future EUROMAT saw the launch of an industry event prior to the General Assembly to showcase key activities from industry taking place in Sweden.

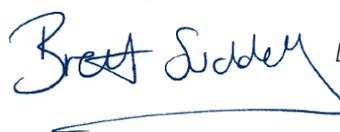
As FEMS continues to grow, I am proud to welcome our first (and I hope, of many) Associate members, ESM, based in Switzerland and further details on this organisation can be found later in this newsletter. We continue to build

strategic partnerships with organisations both inside and outside of Europe. We have visited many of our member societies over the past two years to ensure that the direction we are heading in is in line with expectations of our members, this also helps cement our strong relationship we have with our members some of whom have been actively involved since 1987 when FEMS was first established. We have signed a MoU with Taylor & Francis which delivers benefits (25% discount on T&F publications) to individual members of our member societies, further details of these can be found in this newsletter and on our member benefits flyer which lists all of the benefits you as individual members receive from FEMS.

Sadly, this also marks my last newsletter as your President as I come to the end of my two year term of office. Although, there is still a lot in the diary to be done before I finish at the end of the year! The past two years have been extremely busy working tirelessly on items that will keep FEMS thriving for many more years to come. A number of which are featured in this special edition newsletter. I hope you find the articles of interest.

As I sign off I'd like to thank, from the bottom of my heart, all of those individuals on the FEMS Management and Executive Committees, and member society representatives who have supported me during these past two years to deliver all the new and exciting initiatives which have now come to fruition. Also, to the Managing and Scientific committees of EUROMAT 2017 you have done a sterling job which is borne out by the record number of delegates we have joining us this week in Thessaloniki. I wish you all an enlightening and enjoyable conference, developing existing contacts and creating new ones. I look forward to working with our new President Professor Paloma Fernández-Sánchez (previous President of Sociemat) from January 2018.

Kindest Regards & Best Wishes,



Dr Brett C Suddell CEnv FIMMM  
President, FEMS 2016-2017

# WELCOME TO EUROMAT 2017



Thessaloniki Greece - September 17-22, 2017

## This year's Meeting Point for the Materials Community in Europe and worldwide

The materials Science and Engineering community will meet in Thessaloniki, Greece, at EUROMAT 2017 (<http://euromat2017.fems.eu/>). This is the 15th event in the series of EUROMAT conferences, which are organised under the auspices of the Federation of European Materials Societies (FEMS) every two years since 1989, and well recognised internationally as the prime venues in Europe for the gathering of a wide community of academics and industrialists who are active in the field of Materials Science and Engineering (MSE).

The EUROMAT 2017 conference is co-organised by the two Greek FEMS member societies, the Hellenic Metallurgical Society (HMS) and the Hellenic Society for Science and Technology of Condensed Matter (HSSTCM). The conference has been supported by an impressive number of sponsors and exhibitors, offering educational, networking and promotional opportunities for the conference delegates.

Greece has always been at the crossroads of civilizations and at the forefront of scientific thinking both in the ancient and the modern eras. It has been the acknowledged foundation of western civilization, of most physical and mathematical sciences and continues to inspire in many fields of scientific and technological endeavour. The emblem of the Conference- *Hephaestus hands the Achilles' armour to Thetis (Iliad, XVIII, 617) taken from an Attic red-figure Kylix, 490-480 BC* - was chosen as it symbolizes the great tradition of MSE in Greece. The superior properties of laminate composite materials were first reported for the shield of Achilles. The Iliad of Homer (800 B.C.) describes Achilles' shield as composed of five layers: 2 bronze, 2 tin and 1 gold. At the same time, Hephaestus decorated the shield with fine sculptures, evidence of the high standard of art in ancient Greece. Nowadays, scientific research in MSE in Greece is very active with at least 4 Research Institutes, 3 University Departments, and many other laboratories in Universities and Research Centres devoted to it, with over 2000 faculty members and researchers and much more graduate students working in various fields.

The conference comprises 57 Symposia grouped into 8 Areas, seven of which cover Functional and Structural Materials, Processing, Characterisation and Modelling, Energy and Environment, Biomaterials and Healthcare, Raw Materials and the eighth that is specifically dedicated to Education and Technology Transfer. Four Symposia are jointly organized by FEMS and TMS reflecting their strategic choice for cooperation on both sides of Atlantic. Over 2700 abstracts were received

from 63 countries worldwide, and more than 2000 participants will exchange in the various sessions in tutorials and also in the Matchmaking event about research and development crucial for the innovation and the work force of the European industry.

The programme is particularly highlighted by nine plenary lectures given by renowned scientists from the MSE community, among them the FEMS medals awardees of 2017:

**Doros Theodorou (European Materials Medal 2017):** Professor, Director of the Computational Materials Science and Engineering group at NTUA, Greece

**Thierry Chartier (Materials Innovation Medal 2017):** Research Director and Head of the "Science of Ceramic Processes and Surface Treatments" CNRS Laboratory, Limoges, France

**Andres -Fabián Lasagni (Materials Science & Technology Prize 2017):** Professor, TU Dresden, Germany

**John Ågren:** Professor of Physical Metallurgy, KTH, Sweden

**Anna Fontcuberta i Morral:** Professor of Materials Science, Head of the Laboratory of Semiconductor Materials, EPFL, and Switzerland

**Oliver Gutfleisch:** Professor for Functional Materials, TU Darmstadt, Scientific Manager at Fraunhofer IWKS Materials Recycling and Resource Strategies, Germany

**Dimitris Lagoudas:** Professor of Aerospace Engineering, Director, Texas Institute for Intelligent Materials and Structures (TiIMS), Texas A&M University, USA

**Luis M. Liz-Marzán:** Professor, Scientific Director of CIC bio-maGUNE, San Sebastián, Spain

**Spyros Pantelakis:** Professor, Director of the Laboratory of Technology and Strength of Materials, University of Patras, Greece

High level speakers are invited for the G Session, which covers interdisciplinary issues ranging from education and careers, to research, development and innovation, and to strategic materials for Europe and key resource management.

The Executive Committee of the Federation of European Materials Societies (FEMS), the Scientific and Managing Committees of EUROMAT 2017 as well as the organizing Greek Societies, the Hellenic Metallurgical Society (HMS) and the Hellenic Society for Science and Technology of Condensed Matter (HSSTCM) are looking forward to seeing you in Thessaloniki and wish you an interesting and unforgettable event!

# JUNIOR EUROMAT 2018

The next Junior EUROMAT, number 14 in the series, will take place from the 8th to 12th July 2018 in Budapest, Hungary. The President of FEMS visited Budapest on 9th March to view the venue, meet the organisers and attend the official signing of the contract for the event. The event is being organised by the Magyar Anyagtudományi Egyesület (MAE), the Hungarian Society of Materials Science, one of FEMS' 28 national member societies.

This event will mark a new chapter in the history of Junior EUROMAT as this will be the first time the event has been organised outside of Lausanne, Switzerland. As part of a new strategy by FEMS, the event will move around Europe and we have also recently approved the location of the 2020 event which will be Grenada, Spain. The 2018 event will take place in a central city location in the heart of Budapest that is well served by metro and



*Chair of the JE18 Organising Committee, Dr Csaba Balazsi, FEMS President Dr Brett Suddell and MAE President Professor George Kaptay in front of the Hungarian Academy of Sciences*

## FEMS Junior Euromat 2018

The Main Event for Young Materials Scientists

<http://junior-euromat2018.fems.eu>



July 8-12, 2018  
Budapest, Hungary

bus lines, hostels and hotels all in close proximity to the meeting venue.

The organising committee are currently working on a number of new initiatives for the event which will be announced in due course. The event website is currently under construction and this will go live in the next few months. We look forward to seeing as many of you there as possible next year for an exciting and engaging event. If you would like further details or know of companies who would be interested in sponsoring the event, please contact the Chair of the organising committee, Dr Csaba Balazsi at [balazsi.csaba@energia.mta.hu](mailto:balazsi.csaba@energia.mta.hu)



*MAE President Professor George Kaptay and FEMS President Dr Brett Suddell following the signing of the Junior EUROMAT 2018 contract*

## FEMS Symposia

Two FEMS Symposia are planned at TMS 2018, Arizona, Abstract Submission Deadline Extended to September 30!

**Nanocellulose Fibrils: A New Constituent in Materials Research**

**Organizer:** Lars Berglund, KTH Royal Institute of Technology  
Cellulose has primarily been used in the form of chemical pulp fibers for paper and board applications, although cellulose fibers are also the key component or precursor to cotton textiles and Rayon or Viscose fibers. Recently, industrially feasible processes have been introduced for disintegration of cellulose nanofibrils (CNF) from the plant cell wall. CNF has been used to prepare nanopaper, aerogels, hydrogels, polymer matrix bio-composites, inorganic hybrids and many other types of materials. Research related to CNF encompasses a number of areas, including structure-property relationships, colloidal behavior, materials preparation studies, and topochemical modification. This symposium will examine the potential, development, and application of CNF. Presentations on preparation methods and structure-property relationships, including interface studies involving molecular dynamics simulations, are highly encouraged. The potential of water-based processing is of particular interest.

[http://www.tms.org/TMS2018/Programming/TMS\\_and\\_FEMS/TMS2018/Programming/TMS\\_and\\_FEMS.aspx?h-key=af29468c-65fc-43d5-ad60-55863c6d0d28](http://www.tms.org/TMS2018/Programming/TMS_and_FEMS/TMS2018/Programming/TMS_and_FEMS.aspx?h-key=af29468c-65fc-43d5-ad60-55863c6d0d28)

**Process Intensification in Pyrometallurgical Systems**

**Organizers:** Bart Blanpain, K.U. Leuven  
Topics of interest for this symposium include, but are not limited to:

- Energy density increases in electric, gas, or other fueled furnaces
- Higher rates of gas injection per liquid volume in bath smelting operations
- Higher degrees of oxygen enrichment, higher firing rates, advanced burner designs
- Advances in furnace types from low intensity, e.g. reverb, to flash or beyond, e.g. plasma
- Changes required to the vessels to maintain vessel integrity at higher processing speeds
- Impacts of high rates of processing on deviation from equilibrium
- Strategies to enhance heat and mass transport to maintain traditional processing efficiency/thermal efficiency
- On-line measurement and other improved process controls which allow for high processing intensities

## As a NATIONAL SOCIETY, you will receive the following benefits:

- Benefits for your members include reduced conference fees (15%), preferential book rates (25%)
- A greater voice in Europe as part of a much larger organisation
- Potential to attract non-members to join your society
- Greater and more extensive publicity across Europe for your society reaching over 20,000 materials professionals
- Dissemination of your own society's events and activities to a wider European audience
- Opening up your events to the wider FEMS membership so the potential for increased delegate numbers
- Society related events endorsed by FEMS
- Ability to input into the European materials agenda
- Direct involvement in FEMS organised events
- Opportunities involving EUROMAT conferences
- At EUROMAT conferences members of national societies will be identified on their delegate badges as being a member of your society – opportunity for more extensive networking amongst your members
- The Society can put "...is a member of FEMS" on their website and letterhead to demonstrate being part of a wider European network
- Video content of FEMS lecturer presentations is available for use
- Increase societal income by organising FEMS endorsed events with other member societies in the FEMS network
- Attendance at regional society meetings with direct access to FEMS management committee
- Nominate members for FEMS awards and medals
- FEMS has developed valuable links to the European Commission and to important European Technology Platforms being a member of the Alliance for Materials (A4M). As a National Society Member of FEMS you will shape the future of materials R&D and by this actively contribute to the societal challenges in Europe.



Member

FEMS

FEDERATION OF EUROPEAN  
MATERIALS SOCIETIES



1987 – 2017  
www.FEMS.org

**As a MEMBER of your National Society (and if they are a member of FEMS), you will receive the following benefits:**

- As a member you would be entitled to the member registration fee (of the national society) at 'FEMS endorsed events' which can include conferences and workshops (where you see the FEMS logo on event promotional materials and also advertised via the FEMS website)
- Reduced rates (15% or member rate offered by the organising society) to EUROMAT
- Reduced rates (15% or member rate offered by the organising society) to Junior EUROMAT
- Preferential rates to Taylor & Francis publications and books and CRC publications (25% discount using special code available from your National Society)
- Membership and access to a vast European network of over 20,000 materials professionals
- Receive copies of the FEMS newsletter
- You can be nominated for FEMS awards by your National Society (subject to meeting the relevant criteria)
- Opportunities to network with materials professionals at FEMS events
- Access to FEMS conference proceedings via secure area of FEMS website and other Knowledge Exchange Materials
- FEMS has developed valuable links to the European Commission and to important European Technology Platforms being a member of the Alliance for Materials (A4M). As a member of your National Society you will shape the future of materials R&D and by this actively contribute to the societal challenges in Europe.

**If you are unsure whether your national society is a member of FEMS please check our website for further information.**



Associate

FEMS

FEDERATION OF EUROPEAN  
MATERIALS SOCIETIES



1987 – 2017  
www.FEMS.org

**As an ASSOCIATE MEMBER, you will receive the following benefits:**

- Preferential exhibition rates at FEMS organised events
- Opportunity for your staff and officers to become members of the National Society
- Membership of a vast European network of over 20,000 materials professionals
- Your organisation profile on the FEMS website
- Jobs Fair opportunities
- Industrial matchmaking events with companies and members
- Publicity for your organisation as an Associate Member within the FEMS newsletter (once per year)
- Reduced fees for attending EUROMAT and Junior EUROMAT conferences
- Preferential sponsorship opportunities at FEMS organised events
- FEMS has developed valuable links to the European Commission and to important European Technology Platforms being a member of the Alliance for Materials (A4M). As an Associate Member of FEMS you will shape the future of materials R&D and by this actively contribute to the societal challenges in Europe.

**Associate member level costs are based on organisation size and are available on application.**

**If your organisation is interested in becoming an Associate Member of FEMS please contact our membership team at [membership@fems.org](mailto:membership@fems.org)**

# Proud Publishing Partners

Browse the journals online by reading the aims and scope, accessing articles for free and finding out more about the Institute of Materials, Minerals and Mining (IOM3).



<http://bit.ly/2timcwm>



## FEMS first Associate Member voted to be admitted into membership



The FEMS General Assembly was unanimous in their agreement to admit ESM (Entwicklungsfonds Seltene Metalle, the Foundation for Rare Metals) to become the first FEMS associate member, subject to the terms of the membership grade being finalised at the next FEMS EC meeting. The "Entwicklungsfonds Seltene Metalle" (ESM Foundation) is a Swiss non-profit organization founded in 1951. It is dedicated to support research and development activities in the field of Rare and Critical Elements, with a focus on their industrial applications. In pursuit of this goal, the Foundation sponsors and organizes conferences and workshops, publishes studies and surveys, coordinates projects in the field of Rare and Critical Elements, and confers scholarships and educational grants in areas relevant to the Foundation's topical focus. ESM is a public interest foundation governed by Swiss Law. Its Board of Trustees represents a good balance of industrial and academic members. Among other responsibilities, the Board elects the president and chairman, adopts an annual plan of financial operation and defines the strategy. Day-to-day responsibilities are managed by the CEO who is selected by the Board.

ESM is operating within a national and international network of experts, partner institutes and organizations. Memberships of ESM include the EIT Raw Materials, the World Resources Forum Association, and the Swiss Academy of Technical Sciences. ESM is happy to join FEMS as an Associate Member and for the opportunity to exchange within this European network of materials experts.

Further information and contact: [www.esmfoundation.org](http://www.esmfoundation.org)  
Alessandra Hool, CEO [info@esmfoundation.org](mailto:info@esmfoundation.org)



ESM team photo

# Swedish Industry Forum

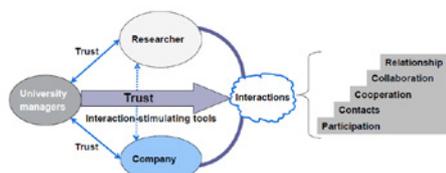
## Stockholm 18th May 2017

During the FEMS General Assembly, FEMS organised a Swedish Industry Forum, co-organised by SFMT (the national society), showcasing models for interactions and innovation with academia. 6 invited speakers (below) from Swedish Industry and Academia were invited to give presentations to the FEMS General Assembly and guests on their research and collaboration routes. The forum was moderated by B Suddell (FEMS Pdt) and Sten Johansson (SFMT Pdt). The event was seen as an opportunity to learn more about the way in which Sweden approaches its research and collaboration between industry and academia in case lessons can be learned which others may find useful.

**Joydeep Dutta**, chair of functional materials at the KTH Royal Institute of Technology, talked about the design and production of nanomaterials and self-organising nanomaterials with specific properties. The research aims to understand the basic relationships between the material's chemical composition, morphological structure and its physical properties. Part of the activities are focused on the development of specific applications in nanotechnology with a focus on energy and the environment. The research teams develop nanomaterials for applications that create new solutions for sustainable development in society for example to reduce pollutants in air and water and to serve as alternative energy sources such as solar cells and the production of hydrogen. Prof. Dutta has written several text books including "Introduction to Nanoscience" and "Introduction to Nanoscience and Nanotechnology" (CRC Press of Taylor and Francis Group LLC).

<https://www.kth.se/profile/joydeep>

**Gert Nilsson**, technical director and head of research and education at Jernkontoret (Swedish Steel Companies Association). Jernkontoret, by establishing a strategic research and Innovation agenda (SRIA), acts to strengthen the steel industry's competitive position so that Swedish steel can continue to contribute to raising living standards. His talk focussed on describing their way of ensuring collaborative R&D. He was very emphatic about the need for mutual trust and close interactions for successful collaborations between academia and industry (see diagram below). In 2009-10 there was a need for a roadmap, the general feeling was that institutes and universities were running the show and they wanted to create a reference document. Vinnova asked businesses to put together strategic agendas to see where government could get the greatest 'bang for the buck', as a result we have produced a document on the "national action for metallic materials" – where they want to be in 2025, one goal is to open up the value chain. They have a plan, if you can help you're welcome!



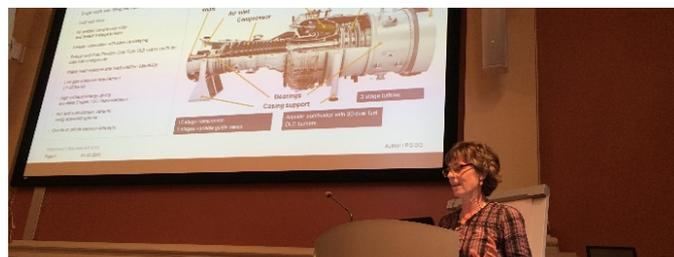
The "crossbow", Jonsson 2015

<http://www.jernkontoret.se/en/the-steel-industry/>

**Yngve Cerenius**, Project coordinator at Max lab IV (hosted by Lund University) for Swedish and European research and industry. MAX IV, one of the brightest synchrotron x-ray sources worldwide, came on stream at the end of 2016 and offers its capabilities to all fields of R&D in materials science and engineering. Lund has a history of providing world class synchrotron facilities for over 30 years.

**Nicholas Cervin**, RISE Bioeconomy. RISE represents the cluster of the Swedish Research Institutes. In fact the RISE institutes Innventia, SP, and Swedish ICT have merged in order to become a stronger research and innovation partner. Through their international collaboration programmes with academia, industry, and the public sector, they ensure the competitiveness of the Swedish business community on an international level and contribute to a sustainable society. 2,200 employees support and promote all manner of innovative processes, and roughly 100 testbeds and demonstration facilities are instrumental in developing the future-proofing of products, technologies, and services. RISE Research Institutes of Sweden is fully owned by the Swedish state.

**Helena Oskarsson** – Siemens, Gas Turbine Lab Manager of the Year 2017, gave a fascinating talk on the development of terrestrial gas turbines. She stated that Siemens is one of the most active companies in Europe for the development of additive manufacturing with nickel (turbine blades) and polymers. Currently they have 24 PhD students working on these subjects.



Helena Oskarsson explaining to the audience the structure and diversity of high tech materials used for the construction of gas turbines.

**Susanne Norgren**, Sandvik Coromant and adjunct professor in Materials Science at Uppsala University, Sweden. Sandvik has 60 R&D centres working on the fundamental needs of the company. Norgren and her team contribute to the development of new materials and products and helps provide better understanding of these from the perspective of wear. The aim is to invent new, superior products up to TRL 9, in the fields of Materials Design, Sintering and Hard Materials that can lead to a better society. Her team tries to stay one step ahead, break new ground, and perform better than their competitors. Her team contributes to Sandvik's future success by being open and exploring new product and research ideas with academia that can lead to new future products.

<http://www.home.sandvik/en/careers/why-sandvik/diversity-and-inclusion/closing-the-gender-gap/susanne-norgren/>

# MATCH

## Materials Common House



FEMS, being a member of the Alliance for Materials (A4M), supports the HORIZON2020 project MATCH - Materials Common House as a partner from January 2015 until the end of the project in June 2017. FEMS was active in various work-packages. Amongst others, FEMS was active in supporting the MATCH database on regional, national and European R&D projects in all fields of materials as well as establishing A4M Sector Technical Expert groups in four main industrial sectors - energy, transportation, construction, health and creative industries which have already met twice in Leuven, Belgium. The goal of these meetings was to provide insight for the industry of innovative material properties and future system functions. A further 2-day workshop will take place in November 2017 in Lausanne, Switzerland.

MATCH had the aim to promote the creation of a strong and sustainable network for European Materials players as Industry, Research and Academia. During 30 months of coordination work performed by 18 partners (CENTRO SVILUPPO MATERIALI SPA (I), Cefic (B), KMM VIN (B), IOM3 (GB), EURATEX (B), NANOfutures (B), TECNALIA (E), EMRS (F), LABORATORIO DI SCIENZE DELLA CITTADINANZA -LSC (I), IK4-TEKNIKER (E), CEA (F), EMIRI AISBL (B), CENTRE DE RECHERCHE PUBLIC HENRI TUDOR (L), CONSIGLIO NAZIONALE DELLE RICERCHE, CNR (I), Fraunhofer (D), FEMS (EU), SPINVERSE OY (FIN), INSTITUTO DE DESENVOLVIMENTO DE NOVAS TECNOLOGIAS, UNINOVA (PT), several presentations were given of various activities which were developed and prepared during the project. In most of the work packages FEMS strongly supported the project objectives due to its large network of nearly 30 member societies in 27 European countries. FEMS experts have prepared various articles of the MATCH News (see <http://www.match-a4m.eu/index.php/latest/news>) and were very active partners in the preparation of the MATCH DB (<http://www.match-a4m.eu/index.php/match-web-db>) in providing data on national and regional research projects due to a very strong support by the member societies. The evaluation of the projects was supported by the cooperation partner S-I-P GmbH (Bernd Vollmer, Dresden) and by Dr Margarethe Hofmann, who was FEMS President and immediate Past

President during the project's lifetime. This database gives extensive information about regional, national and European projects in which materials play an important role. The database can be used as a tool to assist evaluations of research activities in various industrial sectors. FEMS members can use this database as well which will be further supported by MATCH partners, especially Dr. Jérôme Gavillet from CEA Liten (F).

MATCH and its results were also presented at various conferences amongst which were those organised by FEMS e.g. at EUROMAT 2015 in Warsaw, Poland with the "Materials Weekend", 19-20 September, consisting of lectures, tutorials, political events and organised jointly by E-MRS and FEMS with a strong support by the former President of FEMS Prof. Ehrenfried Zschech and his counterpart in EMRS, Prof. Rodrigo Martins. In addition, MATCH results were presented at Junior EUROMAT 2016 in Lausanne, Switzerland, 10-14 July. M. Hofmann, who was the principal organiser of the Junior EUROMAT 2016 also prepared two workshops in Leuven to establish the A4M Sector Technical Groups (A4M STG) supported by the FEMS Executive Committee, and other MATCH partners, especially Prof. Michal Basista (KMM VIN), Lutz Walter (EURATEX) and Dr. Amaya Igartua (IK4-TEKNIKER). At the third A4M STG Workshop to be held in November 2017, a proposal for a materials R&D activity in the next European Framework Programme FP9 will be presented.

MATCH and the project MatVal, which was the preceding project of MATCH, have led to a closer collaboration between the European Technology Platforms, the Materials Societies, FEMS and E-MRS, and further European activities with the European Materials Modelling Council (EMMC), the European Materials Characterisation Council (EMCC), the European Institute of Innovation and Technology (EIT) on Raw Materials and further initiatives with EMIRI, the Energy Materials Industrial Research Initiative. FEMS member societies and their members can benefit from this larger network, which will remain active under the Alliance for Materials A4M, to which the FEMS has been a partner for many years.

*M. Hofmann*

# European Technology Platform for Advanced Engineering Materials and Technologies (EuMaT)



FEMS is one of the key members of the EuMaT platform. Recently, the EuMaT Strategic Research Agenda (SRA) Executive Summary was published and is now available online. <http://eumat.eu/filehandler.ashx?file=15764>



In this SRA we discuss the importance of Materials and Technologies to address the Societal Challenges. The SRA first discusses the importance and the perspectives for materials technology in the most important sectors of relevance for Europe being i) Energy, ii) Health, iii) ICT, iv) Mobility, v) Urbanisation, and vi) Safe & Secure Society. Then, we discuss materials technology perspectives from a 'cross-cutting' focus i) modelling and multiscale, ii) materials for energy, iii) nanomaterials and nanostructured materials, iv) knowledge-based structural and functional materials, v) life cycle, impacts and risks, vi) materials for information and communications technologies (ICT), vii) biomaterials and finally viii) raw materials.

EuMaT technology platform (European Technology Platform for Advanced Engineering Materials and

Technologies) is a European forum that supports planning, decision making and investments in the area of advanced materials technology. Its proposals and actions are based on wide interface and feedback from industry, research community, public authorities and financial community. The paramount theme for EuMaT activities is the novel application of advanced materials technology.

EuMaT has defined eight working groups (WG) established around specific themes which are considered crucial for attaining the targets stated above. These are:

- WG1 Modelling and Multiscale
- WG2 Materials for Energy
- WG3 Nanomaterials and Nano-structured Materials for Functional and Multifunctional Applications
- WG4 Knowledge-based Structural and Functional Materials
- WG5 Lifecycle, Impacts and Risks
- WG6 Materials for Information and Communication Technologies (ICT)
- WG7 Biomaterials
- WG8 Raw Materials

Overall, it is EuMaT's vision that Europe will emerge by the year 2020 as a leader in development and utilization of advanced materials technology solutions and related manufacturing methods. <http://www.eumat.eu>

## FEMS

### welcomes new executive committee members for the period 2018 - 2019

Executive Committee elections for the term 2018 - 2019 took place during the FEMS General Assembly, held in Stockholm in May 2017. The next President will be Paloma Fernández-Sánchez (currently Vice-President), Eric Le Bourhis was elected future Vice-President and Frans Vos (board BvM, Netherlands) was elected to be the new Honorary Treasurer. Jana Horníková, Dariusz Kata and Anna Zervaki were re-elected for further terms as executive officers. FEMS welcomes Gian

Luca Garagnani (AIM Italy), Sten Johansson (Chairman SFMT, Sweden) and Paula Vilarinho (President SPM, Portugal) who were elected to join the Executive Committee as new executive officers. FEMS also wishes to warmly thank the dedicated services of those leaving the Executive Committee at the end of 2017: Ludo Froyen, Honorary Treasurer 2010 - 2017 and Livio Battezzati, Executive Officer 2012-2017.

#### New faces on the Executive Committee (2018-2019):



Gian Luca Garagnani  
Dept. Engineering  
Ferrara University



Sten Johansson  
Dept. Mechanical Engineering  
Linköping University



Paula Vilarinho  
Dept. Materials and Ceramics  
University of Aveiro



Frans Vos  
Manager Materials Consult  
and KU Leuven

# Energy and Materials Seminar

The first of a series of thematic seminars promoted by SPM's Director Council took place last 14th December on the subject of Energy and Materials. With more than 140 participants, the following topics were presented and discussed: photovoltaic energy, aeolian energy, electrochromic devices, fuel cells, heat storage and management, energy consumption in industry and the contribution of industry in co-generation and biomass.

Since there are more topics to be covered, a special event was organized (Satellite Event) during MATERIAIS 2017, which took place on April 10.

In both seminars round tables were also organized in order to discuss fundamental questions. A short white paper with recommendations will be prepared based on the conclusions, in order to be sent to stakeholders in this field and policy-makers.



*Amareleja, Portugal: one of the largest solar photovoltaic plants in the world*

More information at <http://www.spmaterials.pt>

## Cork Alphabet - Abevedário da Cortiça



This is the first attempt by SPM to go into the field of children teaching, in order to promote their interest and understanding of materials and, why not to “push” them to the materials world. This first book is related with cork, a very important local material in Portugal. It is based on a trilogy: one letter → one word starting with this letter related to the material field → a small text explaining that word. Some exercises as drawing and writing on this subjects are suggested and at the end some word games are shown. SPM has sponsored this book for children from 7 to 10 years old. Books were sent to selected schools. The idea is now to reproduce alphabets like this for other materials.

Available also as e-book at <https://www.chiadoeditora.com/livraria/abecedario-da-cortiça>

## LightMAT 2017



The 2nd International Conference on Light Materials – Science and Technology (LightMAT 2017), from 8th to 10th November in Bremen, Germany, gives a new insight into the three most important light metals Aluminum, Magnesium and Titanium.

Fundamentals and the specific requirements that apply to each of the three lightweight materials are discussed. Also the materials are viewed individually or in combination in

multi-material designs, including aspects of processing, joining and corrosion protection. Promising enabling-technologies such as additive manufacturing are highlighted.

Moreover, the LightMAT conference 2017 will host the ECAA 2017 as a special symposium. It provides a forum where Aluminum-researchers, -producers and -users from industry meet with scientists and experts from universities and research laboratories to present and discuss new developments in the science and technology of Aluminum alloys.

## MaterialsWeek 2017

The next Materials Week will take place in Dresden from 27th to 29th September 2017. The congress promises to become a compulsive meeting for developers, designers and decision makers throughout the materials industry. Numerous renowned delegates from science and industry have confirmed their attendance. With its lectures, symposia, and workshops Materials Week 2017 will include the whole range from the newest scientific insights and trends to their industrial application.



The major topics will be additive manufacturing and lightweight design and construction. Simultaneously, the exhibition 'Materials for the future' will be the ideal opportunity for producers, processors and applicators of materials as well as for producers of machines,

facilities and testing equipment to present their products – and of course to establish new business contacts.

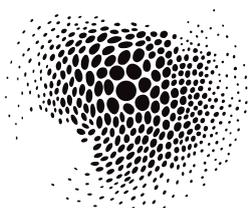
German Materials Society -DGM (<http://www.dgm.de>)



MATERIALS RESEARCH SOCIETY OF SERBIA



Lithuanian Materials Research Society



Bond voor Materialenkennis



Slovenian Society for Materials



Society for New Materials and Technologies in Slovakia

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