

Time Table for IUMRS General Assembly Meeting

Venue: Yasaka Room, 5th Floor, Mielparque Kyoto, Kyoto, Japan

Sunday, August 27, 2017

1. Welcome	13:00 – 13:15	15 min
• Welcome by MRS-Japan <i>Atsushi Takahara, President</i> • Welcome to IUMRS-GA meeting and introduction of officers <i>Soo Wohn Lee, President</i> • Introduction of Adhering Body delegates <i>by each adhering body leader</i>		
2. Summary reports on 2016 activities	13:15 – 13:30	15 min
• Approval of Minutes of 2016 Meeting <i>Yuan Ping Feng, Secretary</i> • IUMRS President <i>Soo Wohn Lee</i> • Treasurer's report <i>Paul Horng</i>		
3. Report by commissions on activities & plans	13:30 – 14:10	40 min
• Meetings <i>J. Williams</i> • Publications <i>Y. Han</i> • Awards <i>R. Martin, B V R Chowdari, T. Mori</i> • GMN <i>B V R Chowdari and RPH Chang</i> • Membership <i>J. Baglin</i> <i>Commissions' activity reports will be circulated in advance. We will focus the discussion on goals of each commission, and priority, strategies, and action plan for the coming years.</i>		
~~~~~ Break ~~~~~	<b>14:10 – 14:20</b>	<b>10 min</b>
<b>4. Report from Head Quarter <i>R P H Chang</i></b>	<b>14:20 – 14:40</b>	<b>20 min</b>
<b>5. IUMRS plan and priority for coming years: discussion &amp; Decisions</b>	<b>14:40 – 15:20</b>	<b>40 min</b>
• <i>EC will present IUMRS' goals and priority for the coming years</i>     • <i>Adhering bodies discuss how they can contribute to IUMRS and how IUMRS can serve each adhering body.</i>		
<b>6. Reports by adhering bodies and discussion</b>	<b>15:20 – 16:00</b>	<b>40 min</b>
<i>Adhering bodies are requested to upload their annual reports to the IUMRS web site and to submit a copy of the report to the Secretary for circulation. Participants of the GA meeting are advised to read the reports. The discussion here will focus mainly on the future plan of each adhering body and issues concerning the society and IUMRS.</i>		
<b>7. Approval of New Membership Applications</b>	<b>16:00 – 16:10</b>	<b>10 min</b>
<b>8. Review of 2017 budget, discussion &amp; approval of the 2018 budget</b>	<b>16:10 – 16:30</b>	<b>20 min</b>
<b>9. Any other business</b>	<b>16:30 – 16:50</b>	<b>20 min</b>
Summary of June 18 meeting in Singapore		
<b>10. Resolution of 2017 IUMRS GA meeting (president of the IUMRS)</b>	<b>16:50 – 17:20</b>	<b>30 min</b>
<b>11. Concluding remarks (<i>Soo Wohn Lee</i>)</b>	<b>17:20 – 17:25</b>	<b>5 min</b>
<b>Move to the Venue by Bus</b>	<b>17:30</b>	
~~~~~ Welcome Reception at the Venue ~~~~~	<b>18:00 – 20:00</b>	

EC&GA Meeting Venue

IUMRS Executive Council Meeting

Venue: 5th Floor-Room YASAKA in Mielparque Kyoto
9:30-12:00, August 27, 2017

IUMRS General Assembly Meeting

Venue: 5th Floor-Room YASAKA in Mielparque Kyoto
13:30-17:30, August 27, 2017

Meeting Place for EC&GA



EC & GA Meeting at 5thFloor-YASAKA in Mielparque Kyoto



Conference Venue

**Kyoto University
Yoshida Campus**

Conference Venue



Next Page

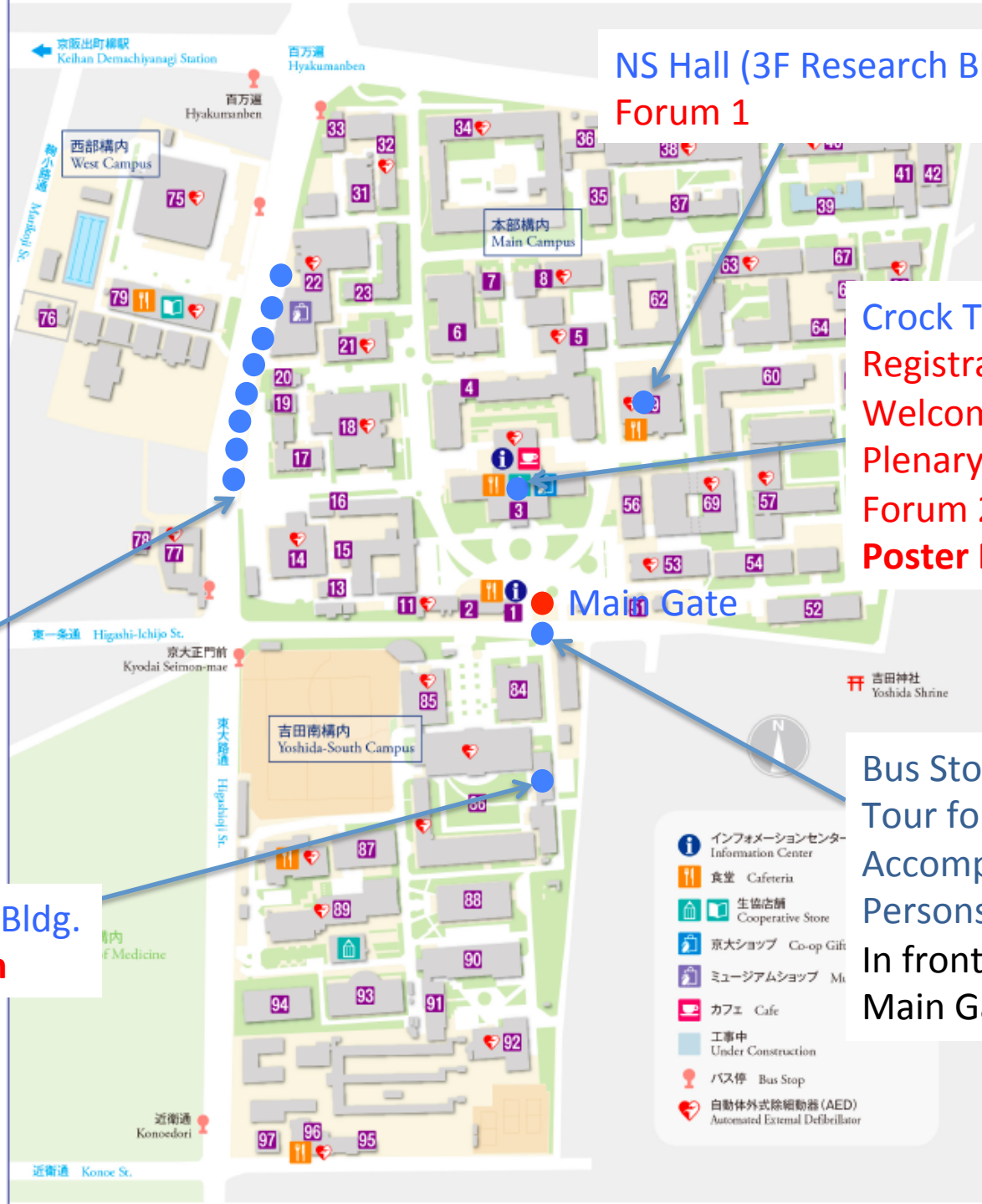
Conference Venue

Kyoto Station



Next Page

Main Gate



NS Hall (3F Research Bldg. #8)

Forum 1

Crock Tower Bldg.

Registration

Welcome Reception

Plenary

Forum 2

Poster Presentation

Main Gate

吉田神社
Yoshida Shrine

Bus Stop

Tour for
Accompanying
Persons

In front of the
Main Gate

Bus to
Banquet Hotel
on Aug. 30
8 Buses at
18:00-18:30

Academic Center Bldg.
Oral Presentation



Minutes of IUMRS General Assembly Meeting

3-4 July 2016

Room 336, Suntec, Singapore

Discussion

Action by

The 2016 General Assembly of the International Union of Materials Research Societies (IUMRS) was held on 3 to 4 July 2016, in Singapore, in conjunction with the IUMRS-International Conference on Advanced Materials (IUMRS-ICAM) which was held at the same venue from 4 to 8 July.

A. Attendance

Hanns-Ulrich Habermeier, President
Osamu Takai, Immediate Past President
Soo Wohn Lee, First Vice President
Roberto Mendonça Faria, Second Vice President & Brazil MRS
Yuan Ping Feng, Secretary
Paul Horng, Treasurer
Robert Chang, General Secretary
Jim S. Williams, Australia MRS & Meeting Commission
Chennupati Jagadish, Australia MRS
Bingbo Wei, Chinese MRS
Yafang Han, Chinese MRS & Publication Commission
Ying Wu, Chinese MRS
Rodrigo Martins, European MRS & Award Commission
Gabriel M. Crean, European MRS
S. B. Krupanidhi, MRS India
P. S. Anil Kumar, MRS India
Yasuro Ikuma, MRS Japan
YEOM Geun Young, MRS Korea
Hyeong Tag Jeon, MRS Korea
Leticia Torres-Martinez, MRS Mexico
Ali Huerta, MRS Mexico
B. V. R. Chowdari, MRS Singapore & Award Commission
Alex Yu-Min Peng, MRS Taiwan
Toshiyuki Mori, Award Commission
John Baglin, Membership Commission
Elton Kaufmann, Development Commission
Evvy Kartini, MRS Indonesia (observer)
Santi Maensiri, MRS-Thailand (observer)
Adisorn Tuantranont, MRS-Thailand (observer)
Kittichai Sojiphan, MRS-Thailand (observer)
Jakrapong Kaewkhao, MRS-Thailand (observer)

Worawat Meevasana, MRS-Thailand (observer)
Nguyen Duc Chien, MRS-Vietnam (observer)
African MRS and MRS Russia were not represented at this meeting.

B. Welcome and Introduction

The IUMRS President and Chair of the General Assembly (GA) meeting, Professor Hanns-Ulrich Habermeier opened the meeting by welcoming everyone, especially representatives from Thailand, Indonesia and Vietnam, to the meeting.

On behalf of MRS Singapore, Professor B V R Chowdari, President of Materials Research Society of Singapore (MRS-S) welcomed everyone to the GA meeting. He said that MRS-S is honoured to host the IUMRS GA as well as ICEM 2016. He thanked IUMRS leadership for giving MRS-S the opportunity to host these meetings. He also welcomed representatives from Thailand, Indonesia, and Vietnam. He said that being the only existing IUMRS member from this region, MRS-S will be very happy to work with MRSs in other ASEAN countries and support their activities.

Hanns-Ulrich Habermeier was pleased to see representatives from other Southeast Asia countries, besides MRS-S which has been very active. He wished that MRS Thailand, MRS Indonesia, and MRS Vietnam can be as active as MRS-S in the future. He said that IUMRS will be pleased to provide assistance, and advised these representatives to work with John Baglin, Chair of the Membership Commission.

Hanns-Ulrich Habermeier then introduced current IUMRS officers, first Vice President S W Lee who will become the IUMRS President from January 2017 (for 2 years), Second Vice President Roberto Faria who was absent at the moment, Secretary Yuan Ping Feng, Treasurer Paul Horng, Secretary General Robert Chang, and Immediate Past President Osamu Takai, and then himself as the President of the IUMRS.

He then asked the representatives of IUMRS Adhering Bodies (ABs) to introduce themselves. They are Jim Williams, President of Australia MRS, (Brazil MRS is represented by Roberto Faria who was absent at the moment), Yafang Han, General Secretary of Chinese MRS (Professor Bingbo Wei is also in Singapore to attend the GA, representing Chinese MRS, but was having some difficulties finding the meeting venue and was absent), Rodrigo Martins of European MRS, S. B. Krupanidhi & Anil Kumar of MRS India, Yasuro Ikuma, President of MRS Japan, Geun Young YEOM, President & Hyeong Tag Jeon, President Elect of MRS Korea, Leticia Torres-Martinez, MRS Mexico, B V R Chowdari, President of MRS-S, and Alex Peng, President of MRS Taiwan. Hanns-Ulrich Habermeier announced that unfortunately, due to various reasons, African MRS and MRS Russia were not represented at this meeting.

C. Minutes of Previous Meeting

The IUMRS Secretary, Yuan Ping Feng, said that the minutes of the previous meeting was circulated, revised based on the feedback received, and the revised version was circulated again. There are some outstanding items which will be dealt with later during this meeting. He invited questions and comments on the minutes. Since there was no question and comment, the minutes were accepted.

D. President's Report on Activities in the Past Year

Hanns-Ulrich Habermeier first gave a brief summary of IUMRS meetings held in the past year. The IUMRS-ICA 2015 was successfully organized by MRS Singapore, together with the International Conference on Materials for Advanced Technologies (ICMAT-2015). The conference drew more than 2,000 participants. IUMRS-International Conference on Advanced Materials (ICAM-2015) was held in Jeju, South Korea. MRS Korea did a good job in organizing this conference which drew more than 2,000 participants.

The following are a few coming IUMRS conferences,

- IUMRS-ICEM 2016, to be held immediately following the GA meeting, from 4 to 8 July, organized by MRS Singapore
- European MRS (E-MRS), together with IUMRS, will organize an International Symposium on Transparent Conductive Materials from 9 to 11 October 2016 in Chania, Greece.
- The 17th IUMRS-International Conference in Asia (ICA) 2016 will be organized by Chinese MRS (C-MRS), from 20 to 24 October in Qingdao, China.
- The IUMRS-International Conference for Young Researchers of Advanced Materials (ICYRAM) 2016 will be organized by MRS India, from 11 to 15 December in Bangalore, India.

The President also presented dates and organizers of future confirmed IUMRS conferences,

- The 15th IUMRS-ICAM, in Kyoto, Japan, to be organized by MRS Japan
- The 16th IUMRS-ICAM, in Nice, to be organized by E-MRS
- The 16th IUMRS-ICEM, to be organized by MRS Korea (MRS-K)
- The 18th IUMRS-ICA, to be organized by MRS Taiwan (MRS-T)
- The 4th IUMRS-ICYRAM, in Adelaide, to be organized by Australia MRS (A-MRS)

He pointed out that substantial changes of the IUMRS Statutes were passed during the IUMRS EC and GA meetings held in October 2015 in Jeju, South Korea, but their implementation have not completely accomplished. A new Commission on Development was created and is headed by Elton Kaufmann. The goal of the Commission is to substantially increase the value of IUMRS to the global materials research community both directly and through its members. The Commission will devise good and valuable activities that serve an important audience in, or related to, our materials science and engineering sphere, and acquire the resources to support those activities.

Other activities of IUMRS such as the Global Materials Network, publication of the IUMRS journal, Progress in Natural Science: Materials International, are progressing well and details will be given later by Robert Chang and Yafang Han, respectively. The President said that he has also had in depth discussions with John Baglin, Robert Chang, Elton Kaufmann and Paul Siffert concerning the structure, main goals and future of IUMRS.

IUMRS has also worked closely with the International Council for Science (ICSU) in the past year. IUMRS representatives, Hanns-Ulrich Habermeier, B V R Chowdari and John Baglin, attended the Scientific Unions meeting of ICSU which was held from 11 to 13 April in Paris. They actively and positively participated in debate and discussion on several issues that are important for the future health and progress of scientific activity in this complex world. More details will be provided by John Baglin later.

E. Special Item – World Materials Summit in Luxembourg

Gabriel Crean, on behalf of E-MRS, presented a proposal to hold the 6th World Materials Summit (WMS) in Luxembourg, on 16-17 October 2017. He gave reasons for choosing Luxembourg as the venue of the meeting which include Luxembourg being a charter member of the Benelux Economic Union, the European Union, NATO and the United Nations, home to European Investment Bank, European Investment Fund, European Parliament, and European Commission. Luxembourg is ranked very high internationally in technological readiness, globalized economy, most innovative countries, talent attraction and retention, and most liveable locations. According to IMD World Competitiveness Ranking 2015, Luxembourg has the most competitive economy in the EU. Gabriel Crean also pointed out that materials is the largest industry sector in Luxembourg and it is recognised in Lux's smart specialisation strategy as "main driver of competitiveness & diversification". In addition, Luxembourg is leading key European Innovation Initiatives.

Gabriel Crean proposes the 6th WMS to be held in Chambre de Commerce, Kirchberg, Luxembourg, which is located in the central business district and close to the European Parliament and European Investment Bank. The conference facilities can accommodate up to 150 participants. He prepared to invite the Vice Premier of Luxembourg to open the meeting, and Minister of Economy, Minister of Sustainable Development and Minister of Higher Education and Research to take part in the meeting. The topics of the Summit will be based around Circular Economy, including Regional industrial value chains in the circular economy, Additive manufacturing for the circular economy, Metallurgy & the circular economy, rare-earth materials & deep space supply, etc. If interested, an IUMRS session on a chosen topic can be accommodated. He also proposes Chateau de Bourglinster as the venue for the Summit Dinner.

In answering a question concerning the short interval between the 5th and the 6th summit, Gabriel Crean pointed out that the WMS is held every two years but there is a delay for the 5th one. In any case, the topics of the two meetings would not overlap. He will coordinate with C-MRS to minimize any potential overlap. The meeting then discussed what roles can IUMRS play and how IUMRS can be more involved. It was pointed out that there are no clear definitions for IUMRS sponsored, endorsed, or supported meetings. It is agreeable that WMS is a bit different from ICAM, ICEM or ICA, but it is a good opportunity for IUMRS. The topics are relevant to IUMRS and IUMRS can benefit by simply putting its logo there. There were suggestions for IUMRS to nominate speakers, or organize sessions. Gabriel Crean welcomed the ideas.

Hanns-Ulrich Habermeier proposed IUMRS officially endorse the summit in Luxembourg, under the provision that IUMRS can play a substantial intellectual, scientific and technological role. The proposal was put for vote and was unanimously approved.

Soo Wahn Lee added that as the next President of the Union, he will push ABs to support this meeting. He also suggested involving other countries. It was further suggested by others that besides nominating topics and speakers, IUMRS should contribute to organization of a substructure of the meeting. **The Meetings Commission can look into this and identify suitable people to work on this.** This is an outstanding opportunity: we can find some keywords to unite all, and once a decision is made, we should have an action plan. Hanns-Ulrich Habermeier wrapped up the discussion on this topic by thanking Gabriel Crean for offering the opportunity for IUMRS to participate in this meeting.

Meeting
Commission

F. Treasurer Report

The IUMRS Treasurer, Paul Horng, presented the income statement for the financial year ended on 31 December 2015. The total income for the year is \$49,117 which comes mainly through annual fee and donation by ABs. The expenditure for the year is \$40,635 which include ICSU due, travel cost by IUMRS representatives to attend ICSU functions, fund for creating and maintaining web sites, staff honorarium, etc.

The proposed budget for financial year 2016 is similar to that for financial year 2015. It has been circulated earlier and approved electronically. In 2016, donations from MRS-K, MRS-S are expected. The projected total income is near \$50,000, close to that in 2015.

The meeting discussed how to raise funds to meet the needs of new IUMRS initiatives. The Commission on Development was created to address this issue and can explore opportunities. However, it is noted that fund raising and publicity go hand in hand. The initiative put forward by Gabriel Crean is a good way to go. There were also suggestions to push all ABs to attend IUMRS meetings and pay their dues (a financial officer may be needed to do this), and ask IUMRS conference organizers to donate more, for example, \$10,000 for ICAM may be too low. Others cautioned that donations should be voluntary, and we should think about what IUMRS can do for ABs first. Some societies may have difficulty collaborating with industries for various reasons.

G. Reports of Commissions

G.1. Meetings Commission

On behalf of the Meetings Commission, Jim Williams reported that no IUMRS sponsored meetings took place since the last IUMRS GA meeting. But three IUMRS meetings will be held in the second half of 2016. They are ICEM 2016 in Singapore, ICA 2016 in Qingdao, China, and ICYRAM 2016 in Bangalore, India. The 5th World Materials Summit will also be organized by C-MRS, immediately before ICA 2016.

Jim Williams pointed out that at the IUMRS GA held in Jeju last year, it was decided that the ICAM 2019 meeting to be hosted by E-MRS and held in Nice.

Calls for IUMRS 2020 and ICYRAM 2020 were made earlier this year and the deadline for submitting proposals was set to 4 June 2016. E-MRS has submitted a proposal to host ICYRAM 2020. No formal proposal was received for ICEM 2020, even though Brazil MRS was interested initially and C-MRS also indicated interest. Presentations will be given on these proposals and decisions will be made later.

Jim Williams then presented the history of IUMRS meetings and expressed the concern that most of the meetings have been in Asia. There has been a desire to move some of the meetings out of Asia. It is good that ICAM 2019 will be in Europe.

Jim Williams pointed out that organization of ICA is by rotation among the Asian MRSs, and it is MRS-K's turn to organize ICA 2018. However, MRS-K has committed to organize ICEM 2018. This needs to be discussed and resolved.

Jim Williams mentioned that the Meetings Commission is facing the following challenges: (1) Difficulty receiving bids for IUMRS sponsored conferences outside Asia; (2) ICAM 2021 proposal bids will be called 4 months before the 2017 GA in Kyoto, because "IUMRS-sponsored meetings guidelines require a 4 year lead time for ICEM, ICAM and ICYRAM conferences" (IUMRS meeting guidelines); and ICA decided roughly two years ahead but on

a rolling schedule, but only one IUMRS sponsored conference can be held by an Adhering body in any one year which leads to conflict such as ICA 2018 & ICEM 2018. In addition, the World Materials Summit has guidelines which have not been passed through the Meetings Commission. Is this an issue? Is ICA too frequent? Should we be looking at every two years or a variable schedule? Should the rolling schedule change or be more flexible and proposals come through the Meetings Commission? He also pointed out that the Meetings Commission needs another member to replace Paulo Fichtner who has resigned, there is a need for better communication and sharing of information across members, and a better process for handling proposals (through the Chair and then the Committee? And who sends out call for proposals?), and tighten up guidelines.

Jim Williams also suggested that we should explore IUMRS sponsored workshops or satellite meetings or forums. These can be topical and serve a wider interest. WMS is a good example. In addition, satellite meetings can be organized in conjunction with ICAM and ICEM. They can be organized by interested groups and self-funded, and can be considered special IUMRS projects. These may become successful and can help IUMRS to generate funds. Robert Chang added that there are plenty of opportunities to do such workshops, schools. He has done National Science Foundation (NSF) funded activities in different places. But someone needs to write and submit a proposal to request for funding. B V R Chowdari pointed out that there are some confusion with IUMRS supported, sponsored, and endorsed conferences. He proposes that ICAM, ICEM, ICA and ICYRAM be called IUMRS conferences. Others can be IUMRS endorsed conferences/workshops. Jim Williams stressed that WMS is special. IUMRS will contribute to its organization and will organize a forum. It is more than endorsing the meeting. Other workshops/satellite meetings/forums are those using IUMRS' high profile, ready audience and use the meeting to add value. Elton Kaufmann added that sponsorship means providing money, while endorsement typically means no money, just using the name.

G.2. Publications Commission

Yafang Han reported that the Publication Commission focuses mainly on Progress in Natural Sciences: Materials International (PNS:MI). It is a bimonthly journal sponsored and organized by both C-MRS and IUMRS. The first issue of the journal was published in November 2010. Since 2012, it has been produced and hosted by Elsevier. The current contract with Elsevier will expire in December 2016, but it is renewable for another 3 years. Yafang Han said that the experience with Elsevier has been positive. Recently, Elsevier improved its submission system. The fee (\$45,000/year) is a bit high, but it is partially contributed by the Chinese government and partially by C-MRS. The editorial committee explored possibilities in working with IOP and Springer, but found no advantage. For example, Springer charges more (85,000 Euro/year) than Elsevier. A decision has been made to continue with Elsevier.

According to the Chinese publication bylaws, a journal must have an authorised publisher which plays a supervision role for the journal. Before 2010, the National Natural Science Foundation of China (NSFC) was the publisher and sponsor of PNS:MI. Since 2011, NSFC no longer sponsors the journal, and it is necessary to identify a new partner. After exploring various possibilities, the committee has decided to partner China Science Publishing & Media Ltd (Science Press). Science Press was established in 1954 and it currently publishes more than 10,000 titles. The fee (RMB2000 per issue) is reasonable.

Yafang Han also reported that the impact factor (IF) of the journal has been improving steadily. She also presented some statistics on manuscript submission and acceptance. In the past year, a total of 364 manuscripts were submitted to the journal, of which 228 (62.6%) are from overseas. The rejection rate is about 59.3%. She said that the editorial team has been organizing special issues on hot research topics which approved to be an effective way of increasing the IF of the journal. Another initiative by the team was the introduction of excellent paper awards. The inaugural Shi Changxu Paper Award was given to Zhi-gang Chen of University of Queensland. This award is for an author of a paper published in PNS:MI which has been cited more than 100 times in total, or 50 times within the first 3 years of its publication. In addition, six excellent paper awards were presented to various authors.

Yafang Han reported that the financial situation of the journal publication is healthy. C-MRS is lucky to receive strong support from the government, group members, and domestic authors who contribute RMB400/page. The cost for producing the journal is about RMB 0.8 million per year.

Hanns-Ulrich Habermeier congratulated the publishing team led by Yafang Han for its amazing progress. He thanked their effort in improving the quality of the journal, particularly for raising its impact factor from 0.7 to 1.7 in a short time. **It was urged that the relevant information, particularly the fact that it is open access journal but page charges are waived for overseas authors, should be publicized on the IUMRS web site. All ABs were urged to support PNS:MI even though they may be publishing their own journals.** Soo Wohn Lee also suggested encouraging conference participants to contribute manuscripts to the journal.

Publication
Commissions
and all
Adhering
Bodies

G.3. Awards Commission

Rodrigo Martins gave an update on the **Global Leadership and Service Medal**. This is a gold medal established 2 years ago. The idea is to honour mainly public servants whose service contributions benefited the scientific community. It uses IUMRS' name, but sponsored by companies. The award committee currently has 23 members. The award is presented every two years. To increase its impact, the committee will make an effort to make this award converge with IUMRS initiatives and present the award in a prestigious way in the European parliament. Compared to the first time, the award has gained more support from political organizations and this time 95% of the members of the European parliament, from various backgrounds, support the award.

There will be 3 winners for the 2016 award, Professor Maria da Graca Carvalho, Professor Sukekatsu Ushioda and Prof. Wan Gang. Professor Carvalho is a former minister of the Portuguese government for education and science. He is the driving force in the launch of the European Institute of Technology as well as of the first Knowledge Innovation Clusters devoted to Energy and Climate Changes. Being a former MP and rapporteur of the Horizon 2020 program, Professor Carvalho currently serves as the adviser of Commissionaire Moedas for the Research and Innovation matters. The Award acknowledges her outstanding actions to promote innovation and science in Europe. Professor Ushioda is a Globe-trotting physicist, former president of the National Institute of Materials Science (NIMS) and head of the International Union of Pure and Applied Physics (IUPAP) of Japan. The present prize honours his outstanding action aiming to promote and to support a better materials science for all. Professor Wan is the Vice Chairman of the 11th Chinese People's Political

Consultative Conference, Chairman of the China Zhi Gong Party, and Minister of Science and Technology of China and President of Chinese Association for Science and Technology. The prize is attributed in recognition for his establishment of the New Energy Automobile Engineering Center and his active promotion of science and technology between China and its world partners.

The award presentation will be held in the morning of 17 November, followed by lunch. Important political figures will be invited to give speeches at the ceremony and during the lunch. Rodrigo Martins said that IUMRS, as well as science, can benefit from this. It is not entirely for science but science will benefit. In answering queries from the floor, Rodrigo Martins confirmed that the award will be given every two years and there will be call for nomination.

Toshiyuki Mori gave a quick update on the **Somiya Award**, its history, selection criteria, and the winners of the 2015 award. He emphasized that this award honours a team that has collaborated across at least two continents some time during the last decade, and produced work of the highest quality which is recognized by the international materials community. The call for nomination for the 2017 award is currently open. Details and nomination form can be found at <http://www.iumrs-icam2017.org/awad/somiya.html>. The deadline for nomination is 23 December 2016. Toshiyuki Mori encouraged all present at this meeting to nominate a powerful international collaboration team. Nomination forms are to be submitted to him at MORI.Toshiyuki@nims.go.jp before the deadline. The relevant information will also be made available at IUMRS web site.

Toshiyuki
Mori and
Adhering
Bodies

B V R Chowdari also gave an update on the **IUMRS-MRS-S Young Researcher Award**. For the benefit of those attending the GA for the first time, the award was created about 5 years ago to recognize outstanding young researchers in materials science. It was launched in 2012, together with ICYRAM and GMN. Two awards have been presented at ICYRAM 2012 in Singapore and ICYRAM 2014 in Haikou, China, respectively. The next one will be presented at ICYRAM 2016 in India. To encourage the award winners to attend ICYRAM, MRS-S has committed \$5,000 for each award, initially for 5 awards. The award selection committee consists of representatives of IUMRS, MRS-S, and the local organizing committee of ICYRAM. All information about this award can be found at IUMRS web site.

Rodrigo Martins added that if any other society would like to organize future Global Leadership and Service Award, he would be happy to pass on and work with the organizers.

Adhering
Bodies

At this point, the Chairman invited representatives of MRS Indonesia, MRS Thailand and MRS Vietnam to give a short introduction about their societies. The details are given in the next section. Representations by Commission chairs resumed after these presentations.

G.4. Membership Commission

Report of the Membership Commission was circulated earlier and John Baglin also distributed hardcopies at the meeting. John Baglin highlighted some recent and planned activities of the Commission.

One suggestion the Commission would like the GA to consider is to set up a contact directory for all adhering bodies, to make it easier to communicate with ABs.

The Commission also proposes to prepare helpful information, welcome, and constructive suggestions, for leaders of a professional Materials Research community who ask for information and advice about potential membership in IUMRS. He said that IUMRS should be pro-active in providing encouragement, practical ideas that relate to their own individual needs and resources, and accessible pathways for joining our family. Accordingly, the Membership Commission (Oussama Moutanabbir, Giovanni Marletta and John Baglin) is working to develop a Welcome Brochure that will offer information, realistic options for action, and (if they wish) easy contact with a personal advisor on this Commission who will work with them to further develop their Materials Research organization. Comments and suggestions – especially from the organizations currently considering IUMRS Membership, are welcome.

Discussion is also in progress among Commission members about the nature and value of benefits with which we can attract new Partner organizations for IUMRS. It also raises the issue of the potential role of current Materials Societies in making fruitful contacts in their home regions. A realistically viable plan for such membership expansion needs to be found. The Commission will be working on that in the coming months.

John Baglin also gave further updates on IUMRS participation of ICSU events. The meeting of the Scientific Unions of ICSU was held in Paris, April 11-13, 2016. IUMRS was represented in this 3-day meeting by Hanns-Ulrich Habermeier, B V R Chowdari and John Baglin. The IUMRS delegation actively and positively participated in debate and discussion on several issues that must be regarded as critically important for the future health and progress of scientific activity in this complex world. IUMRS raised its concern on the Open Access Data Policy which might be drafted by people who have no knowledge in activities in research labs. Following some contacts made at this Unions meeting, B V R Chowdari has agreed to chair the next Physical, Chemical and Mathematical Unions cluster meeting which will be held in Taipei prior to ICSU General Assembly Meeting in October 2017. B V R Chowdari has also agreed to explore the possibility of organizing a symposium/forum in association with ICSU Future Earth Program during the 9th ICMAT that will be held in Singapore from 18 to 23 June 2017. These activities will further raise the awareness of IUMRS as an advocate for bridge-building and collaboration among the different sciences.

John Baglin also reported that currently there is a call for application for a large (300,000 Euros) 3-year ICSU grant to support new projects that would involve interdisciplinary collaboration between unions, and IUMRS is invited to join the International Union of Pure and Applied Physics (IUPAP) and International Union of Crystallography (IUCr), as “Lead Applicants”, for the proposed project “Enhancing Synchrotron Science in Africa, the Middle East, Mexico and the Caribbean”. John Baglin requested IUMRS think about how to take part in such activities.

To support the activities of the Commission, John Baglin requested a budget of \$3,000 which is mainly for ICSU representatives to attend the ICSU General Assembly in October 2017 in Taipei.

G.4. Development Commission

The Commission of Development was set up following the previous GA. Elton Kaufmann, the Chair of the Commission, gave a presentation on its strategies, work in the past months, etc.

Elton Kaufmann first reviewed some of the historic development of IUMRS and how IUMRS has evolved. We started by nucleating meetings. He pointed out that the name of the union did change from “International Materials Research Committee” to the current name of “International Union of Materials Research Societies” in the early 1990s. Some of our past efforts such as IUMRS Commission on Education, IUMRS Facets, Email listserv are gone and perhaps forgotten. Gabriel Crean pointed out that the Commission on Education does not exist anymore not because it was ineffective but mainly because it has accomplished its goal. Now most of the IUMRS conferences feature a symposium on materials education. Elton Kaufmann continued and pointed out that IUMRS is a unique union and our organization is different from other large unions such as IUPAP and IUPAC (International Union of Pure and Applied Chemistry). It is time now to consider how ABs perceive their relationship with IUMRS, and if there is an interest in change. It is time to think whether IUMRS provide only value to its own members, or also serve the global community with the full participation and support of every Adhering Body?

Elton Kaufmann commented that we have been successful in organizing conferences. However, the credits mainly go to the organizing societies. We need to

- Identify IUMRS activities (current or new) that can garner sponsors
- Identify staff and volunteers who will actively participate
- Build relationships with sponsors (personal contacts are best)
- Design and distribute information and solicitation materials
- Deliver the products that sponsors expect and support (fulfilment)
- Maintain an active interchange with sponsors, donors, & affiliates

To make fund raising goals a reality, Elton Kaufmann believes that a sound, in-depth feasibility study is the essential first step. Will our constituency support our cause? Where are our strengths and weaknesses? Are we aiming too high or too low? Systematically determining answers to these key questions will remove the guesswork from the decision making process, and Board (ABs in our case) effectiveness is critical for a non-profit organization to thrive.

There could be two paths for outreach to participants and sponsors, work through our members or direct appeals and announcements. To maintain our visibility, the easiest is to produce & distribute promotional materials (“stuff”) such as coffee mug with IUMRS logo, followed by, with increasing level of difficulty, social media & blog, electronic newsletters, and fulfilment and continual communication with constituents. Elton Kaufmann suggests that IUMRS should gradually reduce its reliance on volunteers and increase the number of paid staff, as it becomes financially viable.

Finally Elton Kaufmann requested a budget to support planned activities of the Commission.

On the proposed name change from the current name to “International Union for Materials Research”, there was an extensive debate. Gabriel Crean commented that IUMRS has a distinctive nature. It is the union of societies that is attractive to its members. If we move to a union for materials research, we would lose that distinctive nature. Many others echoed the same concern and have reservations about the change of the union’s name. Since no consensus could be reached, decision on the name change was postponed.

Hanns-Ulrich Habermeier wrapped up the afternoon session by again welcoming guest participants from South East Asian countries and hoped that the discussion would not discourage them from joining IUMRS.

H. Presentations by Guest Participating Societies

Representatives from materials research societies of the three South East Asia countries, Indonesia, Thailand, and Vietnam were invited to attend the GA as observers. They are invited to briefly introduce their societies at the meeting.

H.1 MRS Indonesia

Professor Evvy Kartini, President of **MRS Indonesia** (MRS-INA), introduced MRS Indonesia briefly. The society was established in October 2010, with the assistance of the then IUMRS President, Prof. Chowdari. An international conference on materials science and technology was held at the time in Serpong. Since then, MRS Indonesian has held regular activities such as meetings, workshop, conferences, etc. Evvy Kartini expressed MRS Indonesia's desire in becoming a member of IUMRS. She said that there existing several societies related to materials in Indonesia, IUMRS membership would allow MRS INA to bring them together and work more closely. Materials scientists in Indonesia would also benefit through interaction with their counter parts in the region and the world through IUMRS.

Hanns-Ulrich Habermeier thanked Prof. Kartini for attending the GA and giving the presentation on MRS-INA. He advised Prof. Kartini to get in touch with John Baglin, and submit application for consideration. B V R Chowdari added that in case MRS INA has difficulty to paying her dues, MRS-S is willing to help.

MRS
Indonesia &
John Baglin

H.2 MRS Thailand

Next, Professor Santi Maensiri, President of **MRS Thailand**, gave a brief report on MRS Thailand. MRS Thailand is a relative young society, formally established on 2 March, 2016. There are currently 263 members, including 5 corporate members (PTT, SCG Chemicals, Seagate, NSTDA, TISTR & Siam Photon). There are also 6 honorary members. Two committee meetings have been held, on 11 May and 1 July respectively. Coming activities of the society include (i) Joint session in NanoThailand 2016 (27-29 Nov. 2016, Khoa-Yai, Thailand), (ii) General Assembly Meeting at MSAT 2016 (14-16 Dec. 2016, Bangkok), (iii) Committee Meeting and Joint special session at SACT 2016 (14-17 Dec. 2016, Danang, Vietnam), and (iv) The 1st Materials Society of Thailand Meeting (Nov. 2017, TBA). Dr. Adisorn Tuantranont, the Secretary-General will be the contact person of MRS Thailand. MRS Thailand will work closely with its industrial partners, PTT, SCG Chemicals, Seagate, NSTDA, TISTR, and Siam Photon. They will seek government funding, and support from the 11 Centre of Excellence to support its activities.

Hanns-Ulrich Habermeier welcomed the large body of representatives of MRS Thailand and thanked Santi Maensiri for the introduction of MRS Thailand.

H.3 MRS Vietnam

Professor Nguyen Duc Chien, President of **Vietnamese MRS** (V-MRS) also gave a brief introduction of V-MRS. The society was found in 2003 as a non-profit professional scientific organization. However, V-MRS is a member of the Vietnam Physical Society (VPS). V-MRS Office is located in Hanoi University of Science and Technology (HUST), 40 Ta Quang Buu

Str., Hai Ba Trung Dist., Hanoi. The web site of the society is vmrs.org.vn. The society currently has about 400 members, including physicists (majority), chemists, metallurgists. Most of them come from universities and research institutions, in Hanoi and HoChiMinh City.

V-MRS organizes national and international conferences and workshops, such as the bi-annual national Conferences on Solid State Physics and Materials Science (SPMS), the bi-annual International Workshop on Nanotechnology and Applications (IWNA) in Cooperation with Minatec, France, Korea-Vietnam Joint Symposium on Advanced Materials Science and Their Processing, and International Conference on Advanced Materials and Nanotechnology (ICAMN). The society also publishes journals such as Journal of Science and Technology which is hosted by Vietnam Academy of Science and Technology (VAST) and published in both Vietnamese and English, and Advances in Natural Sciences: Nanoscience and Nanotechnology, which is a new ISI journal jointly published by IOP and VAST. Recently, Journal of Science: Advanced Materials and Devices was hosted by Vietnam National University of Hanoi.

Nguyen Duc Chien also highlighted some challenges V-MRS is facing. V-MRS is not a fully independent organization (it is under the Vietnam Physical Society). Most of the members are physicists, and there is no member from industry. Membership fee is low which is not sufficient to cover expenses of the conferences. V-MRS is interested in joining IUMRS but not sure how to proceed. Nguyen Duc Chien thanked IUMRS for help and advice, and the organizers for inviting him to attend the GA. He said that by attending this GA, he hopes to gain experience from members of IUMRS, and seek advices from IUMRS.

Hanns-Ulrich Habermeier thanked Nguyen Duc Chien for giving the presentation. He advised V-MRS to consider engaging chemists. As for IUMRS membership, Hanns-Ulrich Habermeier advised Nguyen Duc Chien to go through the established channel with John Baglin. IUMRS is supportive of V-MRS' activities.

MRS Vietnam
& John Baglin

In answering John Baglin's question, Nguyen Duc Chien clarified that some of the meetings are multi-topics and there is a big effort in nanoscience in Vietnam.

Morning session on Monday 4 July

I. Presentation by General Secretary

Professor Robert Chang reported progress in the Global Materials Network (GMN) and other matters from the IUMRS Headquarters. He said that materials science and engineering plays an important role in solving global challenges and the key is education. The mission and goal of GMN is to unite young materials researchers around the world and promote their global collaborations in materials research and education through a network platform with nodes existing across the globe. It will serve as a virtual space to enable continuous connections and ongoing dialogues for materials scientists and engineers to stimulate communication and collaboration. The initiative was launched in 2012 and a group of regional coordinators were identified. Some of the exciting activities include the ICYRAM meeting which takes place every two years, a Young Researcher Award given at the ICYRAM meetings, and the user-driven and managed GMN website for interactive dialogue and collaborations. ICYRAM has a different format compared to other conferences and there is ample time for young people to discuss and interact. The Young Researcher Award, with a cash award of \$5,000

funded by MRS-S, has attracted very high level researchers. The plan is to evolve the GMN web site to be a dynamic website serving millions of users from academic, industry, government, and non-profit sectors. This web site and ICYRAM meetings will become a central destination for innovators and visionaries to create solutions for global problems together. The first and second ICYRAM meetings were held in Singapore and China successfully. The next ICYRAM meeting will be held in Bangalore in India. Preparation is underway.

We are in process of establishing regional nodes which will support workshops, schools, and new initiatives. They will benefit all citizens, from middle and high school children to professors and professionals. GMN research and education nodes currently under development include 2D materials (Singapore), hybrid materials (Canada), amorphous oxides (US), all solid state batteries (Japan), and ten more nodes under planning. Strengths of different regions were taken into consideration in planning these nodes.

Robert Chang pointed out that technology alone will not solve the world problems. All citizens around the globe need to participate to make a change by changing living habits and attitudes towards global cooperation, and adopting new technologies. We need to prepare future science and engineering literate citizens. This requires education!

Robert Chang further elaborated that the aim is to reach million people. When that happens, if we charge \$1 per member, it would be a sizable income for IUMRS. Robert Chang said that based on his initial contacts with some companies, people in these companies realize the potential of GMN and showed their interest in it.

In answering queries on the floor, Robert Chang clarified that GMN is virtual but there are three levels of access. The first level is open to all. The second level is mainly for ICYRAM participants. They are the core members. The third level is mainly for people participating in nodes which focus on various topics.

Roberto Faria suggested that the Brazil MRS has a university chapter programme, organized by students, which probably can be involved in GMN. Robert Chang welcomed the idea. He will follow up with Brazil MRS and discuss the details when he visits Brazil later. Elton Kaufmann asked how the project is financed. Robert Chang clarified that the initial work was done under NSF sponsorship. For example, in 2012, NSF sponsored 30+ US participants to attend ICYRAM 2012. Now it has been launched, different groups are working on the nodes and the cost to maintain the system is minimal. Elton Kaufmann also asked how senior people can take part in GMN. B V R Chowdari said that GMN is mainly for young researchers and senior people can serve as advisors. Rodrigo Martins added that the GMN is a good action as it allows collaboration globally. Europe is interested in supporting it. There is potential to get financial support. This is a good example of why we need IUMRS. Hanns-Ulrich Habermeier commented that GMN is an important part of IUMRS. He appreciated the effort of Robert Chang and B V R Chowdari in initiating this project.

J. Discussion and Decisions

Next, a few matters in the earlier IUMRS commissions' reports were further discussed and decisions were made where necessary.

J.1. Application for hosting ICEM 2020 by Brazil MRS

Roberto Faria presented Brazil MRS' proposal for hosting IUMRS-ICEM 2020. He said that Brazil MRS has been very active in organizing conferences and outreach activities. It also has an active University Chapters programme in which students team up in various activities up and down the country. The recent conference organized by B-MRS is XIV Meeting in Rio de Janeiro which attracted about 2000 participants, including a large number from South America. The proposed venue for IUMRS-ICEM 2020 is SulAmerica Convention Centre in Rio de Janeiro which provides excellent hotels and conference facilities, and easy access to sightseeing sites. B-MRS has confirmed support from foundation agencies such as CNPq, inct, CAPES, FAPESP. Rio has an airport and is one of the most visited places.

Hanns-Ulrich Habermeier commented that Brazil is close to Argentina, Paraguay, and Chile. We can use the opportunity to attract Argentinians in materials research to think about rejoining IUMRS. He encouraged B-MRS to invite relevant people from Argentina to attend the conference and discuss this matter. John Baglin said that we can similarly invite people from Chile. Soo Wohn Lee shared his experience in attending a conference in Rio de Janeiro. He noted that there are many participants from Asia. He encouraged Roberto Faria to invite some speakers from Asia. Professor Bingbo Wei supports Brazil organizing the conference, and support Soo Wohn Lee's comments, but he considers easy access is important in choosing a conference venue, preferably a big city with a big airport. Elton Kaufmann commented that then the issue would be how to keep participants staying in the meeting. The advantage of holding a meeting at a remote place is that people are more likely to attend conference sessions. Jim Williams commented that there are conferences held in places such as Jeju Island. Even though there is no direct flight from Australia, people went anyway because of the venue. It is not an issue if there is a good domestic connection.

A vote was called to hold IUMRS-ICEM 2020 in Brazil, and it received unanimous support. Therefore, IUMRS-ICEM 202 will be organized by B-MRS. Roberto Faria is advised to discuss the venue.

Roberto Faria
& B-MRS

J.2. Application for Hosting ICYRAM 2020 by E-MRS

On behalf of E-MRS, Rodrigo Martins presented the proposal of EMRS to host ICYRAM 2020, in October 2020 at Hersonissos, Crete, Greece. The provisional chairs of the meeting are George Kiriakidis of University of Crete, Jim Williams, and Robert Chang. The regional coordinators of GMN will be invited to join the organizing committee. A list of scientific topics has been proposed, including

- Advanced, Functional and Hybrid Materials
- Materials design and advance Characterization techniques
- Advanced deposition and solution based techniques
- Materials for Energy and Environmental Applications
- Smart Biomimetic / Bioactive Materials
- Nano and Low Dimension materials
- Materials frontiers for advanced electronics

There will be workshops and tutorials held in conjunction with the conference.

Rodrigo Martins said that Crete is a popular tourist destination and travel is very convenient. Many airlines offer direct flights. Chennupati Jagadish pointed out that computational materials science is missing from the list of topics. Rodrigo Martins said that he will feed that

back to the committee. Hanns-Ulrich Habermeier commented that the list is provisional and will be fine tuned.

A vote was called and the proposal received unanimous support. It is therefore decided that IUMRS-ICYRAM 2020 will be organized by E-MRS in Crete.

Yasuro Ikuma enquired about the minimum requirements for organizing ICYRAM. Hanns-Ulrich Habermeier and Elton Kaufmann replied and said there should be good science. The age limit is for participants. There is no age limit for organizers such as conference chairs.

Rodrigo
Martins & E-
MRS

J.3. Other Meeting Matters

Jim Williams reported that following the afternoon session in the previous and during the dinner, the Meeting Commission discussed the few issues raised earlier and came up with some suggestions.

J.3.1 IUMRS-ICA

On the conflict between IUMRS-ICA and other IUMRS conferences, the Meeting Commission proposed the following solutions for consideration.

Proposal 1: Until 2021, ICA be held every two years after the meeting in 2017 (Taiwan). To cater for existing plans for ICA, Australia be endorsed to run ICA 2019 (in Perth) and Korea be endorsed to run ICA 2021. With help from neighbouring Adhering bodies MRS Indonesia and MRS Thailand be invited to hold (ICA) meetings in 2018 and 2020 if they have achieved Adhering body status at that time, with the size and format of the meeting adjusted to meet their capacity to run such a meeting. The frequency of ICA meetings will be revisited in 2020 to decide if one or two years is the optimum period.

Proposal 2: The location for ICA to be decided 2 years ahead following a call for proposals from the Meetings Commission Chair 4 months before the ICA Executive meeting in the year of the proposal. The ICA Executive meeting decide on the successful bid and the outcome communicated to the IUMRS Meetings Commission.

Proposal 3: The timing of ICA should be separated from ICEM or ICAM conferences held in the same year, preferable by half a year or more.

During the discussion, Evvy Kartini said that MRS-INA is already in discussion with Indonesian Research Union and will be ready to organize an ICA. A possible venue is Bali. She considers this important to Indonesia, as it is difficult for Indonesian scientists to attend international meetings. If an ICA can be held in Indonesia, it would benefit Indonesian scientists. Nguyen Duc Chien is confident that MRS Vietnam would be ready to host an ICA in 2022. MRS Thailand also expressed interested in organizing an ICA in the future.

The proposals received general support from the GA. The final decision will be made by the Meetings Commissions in conjunction with ICA executive committee.

Meetings
Commission

Robert Chang proposed to have another ICA – International Conference in the Americas. It will help to get meetings organized in Canada, US, Mexico, South America. Elton Kaufmann said that MRS may need to be consulted. This idea can be explored in future.

J.3.2 IUMRS Workshops and Satellite Meetings

Regarding IUMRS **workshops and satellite meetings** discussed in the previous day, the Meeting Commission came up with the following proposals.

Proposal 1: IUMRS agrees to host a theme topic at the WMS in Luxembourg in 2017. The Development and Meetings Commission Chairs and their Commissions be tasked with suggesting topics and co-opting Theme Chairs to organise the Session and Speakers. Approval for the topic and organising Committee will be sought from both the WMS Chair and the IUMRS Executive Committee.

Chairs of
Meetings and
Development
Commissions

Proposal 2: IUMRS agrees in principle to organize a satellite forum at an appropriate ICEM/ICAM meeting (say ICEM 2018 in Korea). The Development and Meetings Commission Chairs and their Commissions be tasked with suggesting topics and Forum Chairs to organize the Forum, with input from the IUMRS Executive Committee. The Development Commission (with help from Forum Chairs) be tasked with seeking sponsorship so that the Forum is self-funding.

Chairs of
Meetings and
Development
Commissions

Both of the above proposals have been approved by the GA.

J.4. Application for IUMRS Membership

John Baglin clarified the procedure and process for new membership applications. There are currently three pending applications. In general, societies interested in IUMRS membership should first approach the Membership Commission. After a preliminary assessment, the Membership Commission will make a recommendation to EC. EC can put forward to GA for voting. John Baglin realised that timing is important for the three societies as well as the Meeting Commission to schedule future IUMRS meetings. He advised the applicants to work with the Membership Commission. The Membership Commission will do its best to speed up the process. Voting can be done electronically. The process probably can be completed within a month or so. B V R Chowdari suggested that it would be useful to highlight the criteria for IUMRS membership. Hanns-Ulrich Habermeier said that everything is in the document. John Baglin confirmed "yes" except for the timeline. B V R Chowdari further elaborated that these societies have put in their effort. We should communicate the IUMRS membership requirements to them clearly so that they would not be disappointed if they were told that they did not satisfy certain requirements in the end. John Baglin confirmed that he has met representatives of these societies individually and will work with them closely.

John Baglin &
MRS INA,
MRS
Thailand,
MRS Vietnam

K. Reports by Adhering Bodies and Discussions

As reports from ABs have been circulated prior to the meeting, each AB is invited to give a brief presentation, summarizing main activities in the past year, goals, priority, strategies and action plan for the coming year.

K.1 Australia MRS

Jim Williams highlighted some changes in the circulated report. Chennupati Jagadish, the current Vice President of A-MRS will become the President at the A-MRS Executive Committee meeting in August. A-MRS has revised its statutes and bylaws. A new A-MRS website has been setup at <http://www.amrs.org.au>. A-MRS organized the Materials for the 21st century: from design to application workshop, 9-11 Dec 2015, in Melbourne. It was organized and run by a committee of young researchers and attended by around 70

research students and early to mid-career researchers. It was found to be an excellent networking environment, with many participants identifying new collaboration partners. A special session examined the challenges for women in materials science and was followed by a lively discussion. Australian Nanotechnology Network hosted the International Conference on Nanoscience and Nanotechnology (ICONN 2016) in Canberra in February 2016. ICONN2016 was chaired by Professors Chennupati Jagadish and Hoe Tan from the Australian National University. It attracted six hundred delegates from nineteen countries.

Jim Williams also highlighted some planned future activities, including hosting the ICYRAM 2018, to be held in Adelaide which will be supported by the University of South Australia. The proposed dates are October 21-24, 2018. Associate Professor Drew Evans will be the chair of the conference which will feature oral presentations and posters by young researchers up to the age of 40 organised into several topical symposia. The proposed theme for the conference is: Translating Science into Commercial Reality. Proposed sub-themes including Biomaterials and health, Materials for energy generation, storage & harvesting, Materials for the environment, Carbon and 2D materials, Structural and Engineering Materials, Device Materials. Drew Evans is interested in coordination with other MRSs through social media.

K.2 Brazil MRS

Roberto Faria highlighted some of the activities of B-MRS, including its annual meeting, university chapters, e-newsletter, outreach to community, etc. In particular, the university chapter is more than an organization. It is organized by students from different universities. It started two years ago with 2 groups, but has grown to 12 groups. Roberto Faria is concerned that B-MRS is weak in its collaboration with industries. But they are making effort in this direction.

Robert Chang pointed out that under the leadership of Professor Faria, B-MRS has significantly improved its communication with the outside, thanks to a competent journalist, Veronica, from Argentina who contributed a lot and made a difference.

K.3 Chinese MRS

Professor Yafang Han also summarized a few points from the C-MRS report. She reported that Professor Bingbo Wei will be the President of C-MRS in 2018-2019, after the current President Professor Yuanyuan Li who is serving the 2016-2017 term. Yafang Han herself will remain the Secretary-General of the society. She said that C-MRS also increased its office staff.

C-MRS currently has 178 groups and more than 30,000 members in total. The society has been active in consultation for the Chinese government and materials enterprises. In addition to the PNS:MI journal, the society has been active in publishing other books and reports. C-MRS will organizer IUMRS-ICA in Qingdao later this year and the 5th MWS in Rizhao which is close to Qingdao.

Professor Bingbo Wei conveyed Prof. Zhou Lian's regards. He said that a special party will be organized in Beijing to celebrate Prof. Zhou's 10th anniversary of his successful liver transplant. Professor Zhou is still active and is advising C-MRS. Hanns-Ulrich Habermeyer requested Bingbo Wei to convey regards to Prof. Zhou from the IUMRS GA, particular from

him, as the President, and wishes him good health. Elton Kaufmann pointed out that it was during Prof. Zhou's presidency, IUMRS was admitted to ICSU.

John Baglin was interested in the mechanism for C-MRS to provide consultation to the Chinese Government. Yafang Han shared that the Chinese Committee for Science and Technology is keen to get input from C-MRS and approached C-MRS.

K.4 European MRS

Rodrigo Martins gave an update on E-MRS activities. He said that E-MRS has been growing. Its regular Spring and Fall conferences attract more than 3,000 participants. He highlighted the growing number of Korean participants in these meetings. E-MRS is working closely with the European Commission to promote projects of high impact. A new journal on 2D Materials and Applications will be launched which is a collaboration between E-MRS and IOP. Workshops will be organized and selected papers will be published in the new journal.

K.5 MRS India

Professor Anil Kumar spoke on behalf of MRS India (MRS-I). MRS-I was founded on 10 Feb, 1989. It currently has around 4,000 members, and 169 honorary members. The founding president of the society is Professor C N R Rao while Professor Suresh Das is the current President. S B Krupanidhi is the General Secretary and P S Anil Kumar serves as its Secretary Programs.

MRS-I has been very active in organizing a range of activities. At the national levels, MRS-I organized lectures, seminars, chapter AGMs and annual general body meeting, award lectures, and theme symposia. MRS-I is one of the founding adhering bodies of IUMRS and organized IUMRS-ICA 1998, IUMRS-ICAM 2007, IUMRS-ICA 2013 and is the organizer of the next IUMRS-ICYRAM. MRS-I is also a founding member of Asia Pacific Academy of Materials (APAM). Prof. C N R Rao is its Founder President. Professor O N Srivastava serves as the Secretary who is currently taking care of APAM activities. The APAM India Chapter holds its annual meeting in conjunction with the AGM of MRS-I. MRS-I publishes Bulletin of Materials Science, and the quarterly MRS-I Newsletter. MRS-I is partially supporting up to 10 student projects of (B.Tech, M.Tech, ME, M.Phil, Ph.D) in the area of Materials Science and Technology under the supervision of a MRS-I member. Currently, this support is in the form of a travelling grant to present their project in the MRS-I AGM. It also gives out various medals, prizes to promote materials research.

The next ICYRAM meeting will be held from 11 to 15 December in Bangalore. All ABs are invited to suggest speakers and submit to Prof. Anil Kumar, Chair of the conference. There will be 29 symposia. Large numbers of participants from Japan and Australia are expected. The registration fee is kept low (USD300) to allow maximum participation. Each AB is offered 2 complementary registration, for senior scientists (>40 years).

All Adhering
Bodies

K.6 MRS Japan

Yasuro Ikuma gave a brief summary of MRS-J's activity report. He said that MRS-J currently has around 1000 members, and the society is working on further increasing the number. The annual meeting of the society is held in December each year. As a collaboration between E-MRS and MRS-J, a symposium on "Materials frontier for transparent advanced electronics II" was organized during E-MRS Spring Meeting 2016 held in France which will be continued in future. MRS-J also organized other lectures and educational classes for high school students,

and publishes “Transactions of the Materials Research Society of Japan” and a quarterly Newsletter which is distributed to all members. Immediate plans of MRS-J including organization of IUMRS-ICAM 2017, and membership drive, and to have steady collaborations with other MRSs.

Elton Kaufmann pointed out that during the early days of MRS, membership is part of meeting registration. He suggests MRS-J consider this option. Yasuro Ikuma agrees that this is useful but is concerned with continuation of the membership.

K.7 MRS Korea

Professor YEOM Geun Young updated the status of MRS-K. Established in 1991, the society currently has over 1,000 members. It publishes its own journal: Korea Journal of Materials Research. One of the major activities of MRS-K is its Spring & Fall meetings. The two meetings in 2015 attracted 368 and 417 participants, respectively. The number rose to 485 for the 2016 Spring meeting. MRS-K successfully organized IUMRS-ICAM last year which attracted 1694 participants from 40 countries.

Preparation for IUMRS-ICEM 2018 is underway. It will be chaired by Prof. Taik Nam Kim. The conference will be held from 20 to 24 August 2018 in the Daejeon Convention Center in Daejeon which is considered Silicon Valley of Korea. Access to Daejeon is easy, through the Incheon Airport.

YEOM Geun Young said that MRS-K can organize IUMRS-ICA in 2021 in Gyeongju. The proposed dates will be end of September. The venue will be the Hwabaek International Convention Center in Gyeongju. Gyeongju is referred to as an open-air museum and there are lot of tourist attractions. The conference center offers excellent conference facilities and accommodation options.

K.8 MRS Mexico

Leticia Torres-Martinez updated the activities of MRS Mexico. The main activities include the XXIV International Materials Science Congress (IMRC) in partnership with MRS (US), University Chapters, “Harmonized Standardization of Materials Characterization Techniques” which is a collaboration with the National Metrology Center (CENAM) in Mexico, and Science and Materials Engineering a Prospective in México. The 34 symposia of 2015 IMRC attracted a total of 1851 participants. In conjunction with IMRC, MRS-M also organized tutorial sessions and two joint meetings: the Mexico- China Workshop on Nanomaterials, Nanoscience and Nanotechnology: “Renewable energy and water remediation” (NANOMXCN), and the 6th Latin American Conference on Metastable and Nanostructured Materials (NANOMAT 2015).

MRS-M holds a poster research contest in each of the 7 University Chapters, and the two best research works in each University Chapter were awarded with a scholarship to attend the XXIV IMRC. 12 scholarships were given in 2015. Arrangement was also made with MRS US to have the winning posters of either the Phoenix or the Cancun conference displayed at the other conference.

Leticia Torres-Martinez shared that the Prospective of the Science and Engineering of Materials aims to identify the strengths of the Scientific and Industrial Sectors in México.

She said that administrators are interested using such information to match priority with strength.

K.9 MRS Singapore

Professor B V R Chowdari informed the meeting that MRS-S is relatively young society. It was founded in 1989, initially with 18 members. It has grown rapidly, with >2000 members today. It has actively organized its own conferences, IUMRS conferences, awards from high school to doctorates, and also engaged college teachers. Immediately following this ICEM conference, a workshop on materials education will be conducted, to motivate teachers so that they can influence their students and develop their interest in materials science.

MRS-S organized the last IUMRS-ICA together with ICMAT. 2644 participants from 50 countries attended the conference. For the current IUMRS-ICEM, even though there was an initial concern in level of participation, more than 800 participants have registered online and the majority is from overseas. The conference will feature several plenary lectures, including one by Nobel Laureate Shuji Nakamura, who will also deliver one public lecture.

On future activities, B V R Chowdari said that the next MRS trilateral (Singapore, China and India) conference will be organized by MRS-S in Singapore. Preparation is also under way for the 9th ICMAT conference, to be held on 18-23 June 2017, with at least 29 symposia.

K.10 MRS Taiwan

Professor Alex Peng, President of MRS Taiwan, gave a summary of MRS-T's activities. He highlighted that one of the three Vice Presidents of MRS-T is from industry. The society currently has 1300 individual members and 70 affiliated members, including universities, research institutes, and industrial enterprises. The 2015 MRS-T annual meeting was held in Kaohsiung in November. More than 1100 participants attended the meeting. MRS-T initiated the Materials Innovation Award to encourage students to participate and devote themselves to materials new applications. A Cross-Straits Workshop on the Trend of New Materials Development was jointly organized by C-MRS and MRS-T and was held in Ningbo, China, on May 15-18, 2015. MRS-T also publishes Materials Chemistry and Physics which has an impact factor of 2.259.

MRS-T will co-organize IUMRS-ICA 2016 with C-MRS in Qingdao. He added that IUMRS-ICA 2017 will be held in Taiwan. Alex Peng invites delegates of the GA meeting to attend the conference and visit ITRI (Industrial Technology Research Institute). John Baglin commented that MRS-T is successful in connecting academic and industry/market which represents a good opportunity and can be a model for other MRSs.

L. Further Discussion on IUMRS Plans and Priorities

Being the Chair of the new IUMRS Commission on Development, Elton Kaufmann was invited to give a short presentation on various points the Commission has discussed, and possible recommendation for IUMRS to implement.

On the proposed change of the name of the union, Elton Kaufmann elaborated that the name defines the kind of society, and "union" has a special meaning. It is time for a change. He poses the question, do the ABs want IUMRS to grow in size, impact and visibility?

He pointed out that there are some “unfinished business” from the previous meeting, financial transparency, a more welcoming union name, authorize default fees for affiliated organizations (AOs) and professional associates (PAs) which is up to the GA to decide.

He requested the GA to approve and delegate with instructions and resources the commission to act on the following

- Identify an advocacy leader
- Initiate a public statement process (approval, policy, press releases, ...)
- Access to and ground-rules for mailing & contact lists (mandate re GMN & request to ABs & conferences)
- Initiate social media presence – content generation & helpers (plus eNewsletter &/or blog?)
- Add PNS:MI Journal promotion to the web site (Does this compete with other AB journals?)
- Initiate Op-Ed editorial pages at the web site (with mechanics for visitor comments)
- Add a Development page to the web site (with mechanics for inquiries and donations)
- Obtain and maintain a list of who is authorized to edit AB’s web pages (many need editing/content)
- Authorize secondary communication hub at ANL to support development efforts

Elton Kaufmann also proposed a list of things for further deliberations:

- Re-engage MRS – how? When? Criteria?
- Define organization affiliate and professional associate benefits
- What is the relation now between IUMRS and GMN (no longer NSF, IUMRS)?
- How to make IUMRS operations efficient (both gov. and management)?
- Appoint a board of “web editors” to provide both content and oversight of IUMRS web site.
 - Shift emphasis from individual researchers (not our members) to groups and issues ()
- Development ideas (fundable?) – opinions?
 - Studies with published reports – topics? Sponsors? Partners?
 - Workshops, retreats (stand-alone or satellites)
 - Tutorials and next-gen researcher forums
 - Ideas off the main track (sub bullets)

Hanns-Ulrich Habermeier commented that there are many points which are essential to the future of IUMRS. We should work along these lines. However, there is not enough time to discuss the details here. He suggests giving Elton Kaufmann a free hand to pursue these ideas. The outcome can be communicated to EC which can approve/disapprove the suggestions.

Rodrigo Martins voiced that we need to separate the issues. One is a committee that wants to promote IUMRS as an umbrella of societies which is something we are strongly committed to, but we don’t agree in changing the name of IUMRS. Hanns-Ulrich Habermeier commented that changing the name is one of the items and it is not the most urgent one and may be left out. This issue was further discussed, and re-engaging MRS (US) was brought up. Since no consensus can be reached, Hanns-Ulrich Habermeier suggested letting

Elton Kaufmann go ahead with the plan but without including the name change, and leaving MRS (US) completely out of the discussion. We can focus on things that can be done without the name change.

Elton Kaufmann would like to know whether the voting on the name change should be cancelled or to defer it to a later time. Hanns-Ulrich Habermeier proposed to cancel that proposition (name change as one of the outstanding item from the Jeju GA meeting). It may be brought up again in due time.

At this point, a vote was called to cancel the name change motion of the Jeju meeting which was supposed to be voted electronically. The delegates voted unanimously to support this proposal. Therefore the motion for changing the name of IUMRS has been cancelled.

E. Kaufmann
&
Development
Commission

B V R Chowdari questioned should the other issues brought up by Elton Kaufmann also be discussed. Hanns-Ulrich Habermeier explained that we can give Elton Kaufmann a free hand to work on them. Come back with clear ideas and points, propose them to EC and GA to decide. But B V R Chowdari objected to the phrase “free hand”. Hanns-Ulrich Habermeier further explained that Elton Kaufmann can work within the Commission of Development. And then come back to EC with concrete proposals. The EC can then put forward the proposals to the GA. John Baglin pointed out that final decisions have to be made at the GA, the EC cannot decide on its own.

E. Kaufmann

M. Finance

Paul Horng reported that based on feedback from members, some of the figures in the financial statement have been adjusted. On the income side, membership fees for Australia, India, and EMRS have been adjusted and reflected in the table. E-MRS has agreed to increase its membership fee to \$5000. Expected donations from Singapore, \$3000 in 2015, \$3000 in 2016, are also included. With these adjustments, the total income for 2016 is similar to that in previous years.

Soo Wohn Lee suggested Australia increase its membership fee to \$5000. Jim Williams said that it is certain that A-MRS' fee will go up in time. But at the moment, there is a political concern and he prefers to leave the fee as it is. Elton Kaufmann cautioned that the change (in membership fee) should come from the AB, rather than from the top. John Baglin also added that a donation is not an obligation and we need to go by the Statutes.

It was noted that some of the commissions (Awards, Meetings, Publication) did not request for any budget. It was also pointed out that Mike Driver's expenses should be reduced. Hanns-Ulrich Habermeier explained that this is a projected figure, not an exact budget. Jim Williams suggested changing the name of the item to “admin. assistants”, or “operational assistance (M. Driver or others)”. Robert Chang pointed out that M. Driver can provide support to IUMRS commissions and he is paid by hours.

After some further discussion, the GA unanimously approved the budget for 2016 and the projected budget for 2017.

N. Matters Related to Election of IUMRS Officers

The chair announced that the terms of the First Vice President and Secretary will expire at the end of 2016, and election of new officers should be done soon. He said that he is reluctant to call for nomination for the Secretary position because of the good performance of the current Secretary. But Yuan Ping Feng pointed out that he has served two terms which is the limit.

Jim Williams & B V R Chowdari proposed to make a change, and allow an exception to the two-term limit, so that Yuan Ping Feng can serve for another 2-year term. This proposal received unanimous support. Hanns-Ulrich Habermeier asked Yuan Ping Feng whether he is acceptable to continue serving for another term. Yuan Ping Feng said yes, but a proper election should be done.

Hanns-Ulrich Habermeier asked whether there is any nomination for the first Vice President position. Bingbo Wei responded and nominated Yafang Han. He gave three reasons for nominating Prof. Han: (1) Yafang Han's significant contributions to IUMRS, (2) being an emeritus professor, she has more time to serve IUMRS, (3) IUMRS needs a woman. The nomination was noted. An open call will be made later. All nominees will be evaluated and e-voting will be conducted later.

O. Concluding Remark

In concluding the GA, the Chair thanked all for participations and contributions. Even though some of the discussion may have been a bit controversial, it was done in a friendly atmosphere. This will help to improve our union.

The meeting ended at 13:00.

Recorded by
Yuan Ping Feng

Vetted by
Hanns-Ulrich Habermeier

Attachments

- I. Agenda of IUMRS General Assembly Meeting 2016
- II. Minutes of IUMRS General Assembly Meeting 2015
- III. IUMRS Financial Statement



IUMRS
Income Statement
2017 Budget vs 2016 Actual

UNIT: USD

Items	2016	201705	201712	2017	2018
	Actual	Actual	Estimation	Budget	Budget
Income					
Annual Fee	29,863.00	-	30,000.00	35,000.00	34,000.00
Donation	9,975.00	6,000.00	16,000.00	13,000.00	13,000.00
Interest	200.21	70.56	170.00		-
Total Income	40,038.21	6,070.56	46,170.00	48,000.00	47,000.00
Expense					
-ICSU Dues	1,379.01	1,300.00	1,300.00	1,500.00	1,500.00
-Expense for Membership Commission-Travel	4,665.31	-	4,000.00	4,000.00	4,000.00
-Expense for Development & Other Commission				4,000.00	6,000.00
-Website, Siteground hosting service, domains, fees	539.78	50.77	516.00	1,000.00	1,000.00
-NU staff working on website	24,827.40	24,827.40	46,136.00	25,000.00	32,000.00
-Operational Assistance (Mike Driver or others)	1,740.00	-	2,000.00	12,000.00	2,000.00
-Mailing /Shipping, PO Box/Mike Driver	132.50	-	200.00	200.00	200.00
-Websparks, website developer					
-Miscellaneous*	291.78	87.06	420.00	400.00	400.00
Total Expense	33,575.78	26,265.23	54,572.00	48,100.00	47,100.00
Net - Positive(Negative)	6,462.43	(20,194.67)	(8,402.00)	(100.00)	(100.00)

Miscellaneous : includes (1)Postage(2)Telephone(3)IRS(4)Gift(5)Bank Fees(6)Office Supplies

IUMRS Income Detail				
Adhering Body	Income			
	2016 Actual	2017 Estmation	2017 Budget	2018 Budget
Africa				
Australia	\$975.00	\$1,000.00	\$1,000.00	\$2,000.00
Brazil	\$1,000.00	\$1,000.00	\$4,000.00	\$1,000.00
China	\$4,980.00	\$5,000.00	\$5,000.00	\$5,000.00
Europe	\$2,975.00	\$3,000.00	\$5,000.00	\$5,000.00
India	\$970.00	\$1,000.00	\$1,000.00	\$2,000.00
Japan	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00
Korea	\$4,975.00	\$5,000.00	\$5,000.00	\$5,000.00
Mexico	\$988.00	\$1,000.00	\$1,000.00	\$1,000.00
Russia				
Singapore	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00
Taiwan	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00
S-T	\$29,863.00	\$30,000.00	\$35,000.00	\$34,000.00
Donation from Taiwan (ICA)				\$3,000.00
Donation from China		\$10,000.00	\$10,000.00	
Donation from Japan(ICAM)				\$10,000.00
Donation from Korea	\$9,975.00			
Donation from Singapore*		\$6,000.00	\$3,000.00	
S-T	\$9,975.00	\$16,000.00	\$13,000.00	\$13,000.00
Total	\$39,838.00	\$46,000.00	\$48,000.00	\$47,000.00

IUMRS 2017 BUDGET

Expense	Budget		Notes
Independent Contractor (M C Driver)	\$2,000		
Mailing /Shipping, PO Box	200		
ICSU Dues	1,500		
Travel	4,000		As of April 2016, Baglin, Chowdari and Habermeier in ICSU Meeting
Bank Fees, dues wire transfer	200		
Plaques/Photo Frames		?	
Office Supplies	200		None were applied in 2015, but in 2016 IUMRS should contribute for items used in 2015 and 2016. (Toner, paper, etc.)
Website, Siteground hosting service, domains, fees	1000		
NU staff working on website	25,000.00		1/3 of Chooi's time.
Somiya Award		?	
Telephone	20		
Total	34,120.00		



Proposal for Hosting the IUMRS-ICAM 2021 in Cancun, Mexico

The International Materials Research Congress is a world-class scientific gathering where different subjects of Materials Research Science are presented and discussed.



Introduction

The Mexican Materials Society is proud to present this proposal for hosting the IUMRS-ICAM 2021. In the proposal you will find information regarding the Mexican Materials Society and its evolution, the establishment and current status of our yearly International Materials Research Congress, the composition and robustness of the Mexican materials science community, and the main characteristics of Cancun, the proposed venue for the organization of the IUMRS-ICAM 2021.

Tentative date for IUMRS-ICAM 2021: November, 2021

Proposed Chairs: Prof. Miguel Jose Yacamán, Prof. Leticia Torres, Prof. Sergio Mejía

The Mexican Materials Society

The Mexican Materials Society (SMM for Sociedad Mexicana de Materiales) was formed originally as Mexican Academy of Materials in 1990. In 1991 SMM organizes its first Meeting in Mexico City, with an attendance of about 200 people. In 1992, with the sponsorship of Acta/Scripta Metallurgica, a small workshop is organized in a new emerging field: Nanostructured Materials. The workshop was inserted into the SMM Meeting, in a new venue: Cancun. This was a spectacular beach resort with air communications as good as any big city in the world and many hotels. The meeting was a great success and established for good the Society and Cancun as its home. The following years several meetings took place at the same

time as SMM and all those meetings helped to integrate other groups such as the Electron Microscopists, the metallurgists, the corrosion specialists, the art and archeology and many other groups that became integrated over the years.



The Mexican Society of Materials has as its mission to serve as a meeting point for academics, professionals, institutions and institutions interested in the advancement of Materials Science and Engineering, providing forums where scientific and technological advances in the field are exposed. Similarly, the SMM promotes research, technological development, teaching, and dissemination activities in order to raise interest and culture in science, especially in the field of materials science and engineering.

The vision of SMM is to be a community in constant development, with members who generally promote the improvement of the quality of life of the population, particularly in Mexico, through the activities and collective initiatives of its members.

A very important aspect of our society is that we were founding members of the IUMRS. That was an important part of our activity. SMM hosted the ICAM meeting in 1997 and then again in 2001.

Today, SMM groups a diverse and active community of about 2000 members from more than 50 different countries. Its flagship event, the International Materials Research Congress, attracts each year more than 1700 attendants from Mexico and abroad, from disciplines that include nanoscience and nanotechnology, biomaterials, materials for energy, soft matter, and electronic materials.

IUMRS-ICAM 2021 will be supported by SMM Officers and SMM Board of Governors.

The International Materials Research Congress

In its current form, the International Materials Research Congress is the most important academic forum on Materials Science and Technology in Mexico. In 2017, the IMRC, co-organized jointly with the Materials Research Society, hosted 48 symposia grouped in 8 topical clusters, had 5 plenary talks by well-recognized leaders on their areas, a special lecture on Science, Technology and Society, 12 tutorials directed to students and young researchers, three short courses on complementary essential tools in Materials Science and Engineering, an exposition of academic graduate programs in materials science, a Mexico-China workshop, and exhibits from companies devoted to the development of technical equipment. The symposia included at the 2017 IMRC were:

A. Nanoscience and Nanotechnology

- A.1 Making Materials from The Bottom-Up: from Nuclei and Clusters to Application
- A.2 Nano-Alloys: Theory, Synthesis & Characterization
- A.3 Nano/Meso-Structured Carbon Materials: Theory and Experiments
- A.4 Fundamentals, Characterization and Application of Atomic-Layer Deposited Materials
- A.5 Inorganic Analogues to Graphene
- A.6 Micro-Nanofabrication of Biomedical Devices: Biomems-Nems, Labs-On-A-Chip and Organ-on-a-Chip
- A.7 Nanostructured Materials and Nanotechnology

B. Materials for Energy Applications

- B.1 Materials for Hydrogen Production, Storage, and Fuel Cells
- B.2 Advances on Biofuels: Materials, Characterization, Processing and Testing
- B.3 Materials and Technologies for Energy Conversion, Saving and Storage (MATECSS)
- B.5 Advanced Polymer Photochemistry: from Fundamental Science to Material Technology
- B.6 Photovoltaics, Solar Energy Materials and Technologies
- B.7 Advances in Electrochemical Energy Storage

C. Soft Matter and Biomaterials

- C.1 Materials, Surfaces and Interfaces for Medical Applications and Health
- C.2 Biomedical Applications of Nanoparticles



SMM has a proven experience in the organization of truly international academic events, with speakers of outstanding quality and expertise on their fields, including several Nobel laureates.

C.3 Biomaterials for Tissue Regeneration

C.4 Materials and Interfaces Based on Biomolecular Self-Assembly

C.5 New Trends in Polymer Chemistry and Characterization

C.6 Soft and Biological Matter

C.7 Structure-Property Relationships in Biological and Bioinspired Hybrid Materials

D. Structural Materials

D.1 Advanced Structural Materials: Synthesis, Mechanics, Properties and Applications

D.2 Effect on Concrete of Supplementary Cementitious Materials and Smart Additives

D.3 Aeronautical and Aerospace Processes, Materials and Industrial Applications

D.4 Materials in Nuclear Science and Technology

D.5 High Entropy Alloys: Synthesis, Characterization and Potentials Applications

D.6 NACE: Corrosion and Metallurgy

D.7 Materials and Advanced Coatings for Harsh Environments and Cutting-Edge Applications

E. Material Characterization

E.2 Microscopy of Materials and Nanomaterials

E.3 In Situ/Operando and Computational Studies of Electrochemical Energy Materials

E.4 Structural and Chemical Characterization of Metals and Alloys

E.5 Materials Characterization in The Stem: Applications, Insights and New Methods

E.6 Particle Accelerators for Science & Engineering of Materials

F. Functional Materials

F.1 Chalcogenide Semiconductor Research and Applications

F.2 Functional Materials Based on Perovskite-Type Oxides and Mixed Oxide-Anion Solids: Ferroics, Superconductors and Related Materials

F.3 Advanced Catalytic Materials

F.4 Shape-Memory and Self-Repairing Materials

F.5 Sensing Materials

F.6 Smart Synthesis, Emergent Properties and Advanced Characterization of Multifunctional Oxides

F.7 Phase Transitions in Functional Materials: from Fundamentals to Applications

F.8 Advances in Functional Semiconducting Materials

F.9 Materials and the Environment

G. General

G.1 Active Matter and Processes out of Equilibrium

G.2 Materials Science and Engineering Education: The General Public to Future Scientists and Engineers

G.3 Cultural Heritage and Archaeological Issues in Materials Science

G.4 Strategies for Fostering Academy-Industry Relationships

G.5 Low Cost Instrumentation - Empowering Science in Developing Countries

H. Materials for Electronic, Magnetic and Optical Devices

H.1 Advances in Organic and Organic/Inorganic Hybrid Materials for Electronics and Photonics

H.2 Memristive Devices - from Fundamentals to Applications

2980 abstracts were submitted, and about 1800 members are expected to attend the meeting. Around 50% of the attendance was domestic, and the rest were from 58 different countries, with a strong representation from the United States, Colombia, Brazil, Germany, China, France, United Kingdom, and Japan.

	2012	2013	2014	2015	2016	2017
Abstracts Received	2188	2321	2437	2851	2558	2980
Congress participants	1339	1411	1516	1851	1718	
Symposia	28	30	30	36	38	49
Plenary Talks	5	5	5	5	5	5
Courses	6	6	8	9	10	12
Roundtable/ Science Lunch	1	1	1	1	2	1
Commercial Stands	40	47	46	49	49	49
Participating Countries	46	49	46	51	39	

Statistics of the last six years of the International Materials Research Congress, showing its sustained growth. Some numbers of 2017 are not available yet.

The Mexican Community of Materials Scientists

Nowadays, the Mexican community of Materials engineers and scientists has reached a great level of maturity and activity, in areas as diverse as polymers, biomaterials, nanomaterials, optical materials, semiconductors, concretes, and solar cells. Strong research groups are based at UNAM, CINVESTAV, CIMAV, BUAP, UMSNH, UAM, UANL, UASLP, UDLA, UNISON, IPICYT, among many others. Each year, around 1000 researchers and students from these institutions come to Cancun to attend the IMRC, to act as symposium organizers, to explain results from their research, exchange ideas, and nucleate international collaborations.

The City of Cancun

Cancún, a Mexican city on the Yucatán Peninsula bordering the Caribbean Sea, is known for its beaches, numerous resorts and nightlife. It's composed of 2 distinct areas: the more traditional downtown area, El Centro, and Zona Hotelera, along, beachfront strip of high-rise hotels, nightclubs, shops and restaurants. Cancún is just north of Mexico's Caribbean coast resort band known as the Riviera Maya. An added advantage for this great venue is that it is conveniently situated near the Mayan city of Chichen Itza and other sites of this great civilization that can make a pleasant cultural visit.

Cancún is served by the Cancún International Airport. It has many flights to North America, Central America, South America, Asia, and Europe. It is located on the northeast of the Yucatán

Peninsula serving an average of about fifteen million passengers per year. The airport is located around 20 km (12 mi) from the hotel zone, approximately a 20 minute trip by car. On a daily basis the airport is well connected with the Mexico City International Airport (MEX) and many other airports in the United States.

Every year the IMRC takes place at the Marriott Hotels, Casa Magna and JW Marriott. Both hotels are located one next to the other and have enough space to act as Congress settings and host in a very capable and professional manner any large meeting.

Another venue capable to host large meetings is Cancun International Convention Center, or ICC. Cancun ICC is the largest venue in the area, with 14,200 m² (152,847 ft²) of event space, has the most modern technical support in the country for events of any kind, from a executive breakfast, a wedding, a convention or a congress, to plays and musical concerts. It is located at the heart of the hotel zone in "Punta Cancun", just 20 minutes away from the International Airport.

Summary

The Mexican Materials Society has the experience and manpower to organize great quality academic events such as the IUMRS-ICAM. There is a large Mexican community of materials science and engineering specialists that are members of SMM, and thus a good domestic attendance can be expected. Cancun, the proposed venue, is a widely renown resort with the capacity to sustain large scale academic events, many hotels and with an excellent connectivity to many cities in the US, Asia and Europe.

E-MRS application to the 2019 IUMRS-ICAM Conference

Nice – May 27-31



**EUROPEAN MATERIALS
RESEARCH SOCIETY**

BP.20

F67037 Strasbourg cedex 2

www.european-mrs.com



E-MRS application to the 2019 IUMRS-ICAM

The Conference Chairs



Prof. Cinzia Casiraghi
School of Chemistry
University of Manchester
United Kingdom

Prof. Chinho Park
School of Chemical Engineering,
Yeungnam University
Korea



Dr. William Tumas
National Renewable Energy Lab.
Golden, CO,
USA

Prof. Motoko Kotani
Adv. Institute for Mater. Research
Tohoku University
Japan



Prof. Fu-Sheng Pan
National Engineering Research
Centre for Magnesium Alloys
Chongqing University
China

Dr. Gilles Dennler
IMRA Europe SAS
EMRS Executive Board
France



E-MRS application to the 2019 IUMRS-ICAM

Main scientific themes and relative Symposia

AREA 1

Decarbonized Energy and Sustainability

- New materials, concepts and hybrid systems for renewable energy generation
- Hydrogen production, storage, and utilization
- Clean coal, emission control, and CO₂ capture
- Energy storage (electrical, chemical energy, etc...)
- Advanced Catalysis for clean industrial chemistry
- Circular economy of materials for energy (recycling, life cycles, etc...)
- Power electronics and solid state lighting
- Next nuclear generation, and waste management

AREA 2

Materials for Human Well-being

- Biocompatible materials and artificial bioelectronic medical devices
- Biofunctional interfaces and advanced probing techniques
- Implantable, transient, edible and recyclable devices on foil
- Optoelectronic interaction and interfaces with Biological Materials and living organs
- Biosensors and Lab-on-a-chip
- Nanomaterials for medicine/health application and related safety issues

AREA 3

2D Materials: Synthesis, characterization and perspectives

- Graphene, Transition Metal chalcogenides, and novel materials
- Synthesis and characterization methodology
- Van der Waals Heterostructures
- New concepts and applications: Electronic devices, sensors and actuators

E-MRS application to the 2019 IUMRS-ICAM

Main scientific themes and relative Symposia

AREA 4

Advanced Modelling for new materials discovery and development

- Materials by design (or reverse design)
- Multiscale Computational Materials Science
- High Throughput methods, Big Data, and Machine learning
- Non-equilibrium complex materials: From crystalline materials to glassy soft matter

AREA 5

Advanced characterization of materials

- Advanced microscopy in imaging in modern materials research
- Large equipment for materials characterization (synchrotron, neutrons, etc..)
- Photonic methods (Terahertz, etc...)
- Correlation with theory
- Novel techniques for transparent electronics

AREA 6

Materials Sciences for Cultural Heritage

- Advanced Materials for risk prevention and protection of Cultural Heritage
- Advanced Materials for conservation and restoration
- Greening historic buildings
- Cultural heritage diffusion and outreach

E-MRS application to the 2019 IUMRS-ICAM

Miscellaneous proposals

European-Chinese Event

*Critical Elements and Strategic Materials for Key-Enabling Technologies
(nano- and power electronics, photonics, and energy)'*

International experts involved:

- from China:** Prof. Hailing Tu (GRINM, Beijing)
Prof. Chao Zhao (IME, CAS, Beijing)
Prof. Deren Yang (Keystate Institute, Zhejiang University)
- from Europe:** Prof. Eddy Simoen (IMEC, Leuven)
Prof. Henry Radamson (KTH, Stockholm)
Prof. Hans Richter (GfWW, Frankfurt/Oder)

Selected location: NICE – Côte d'Azur



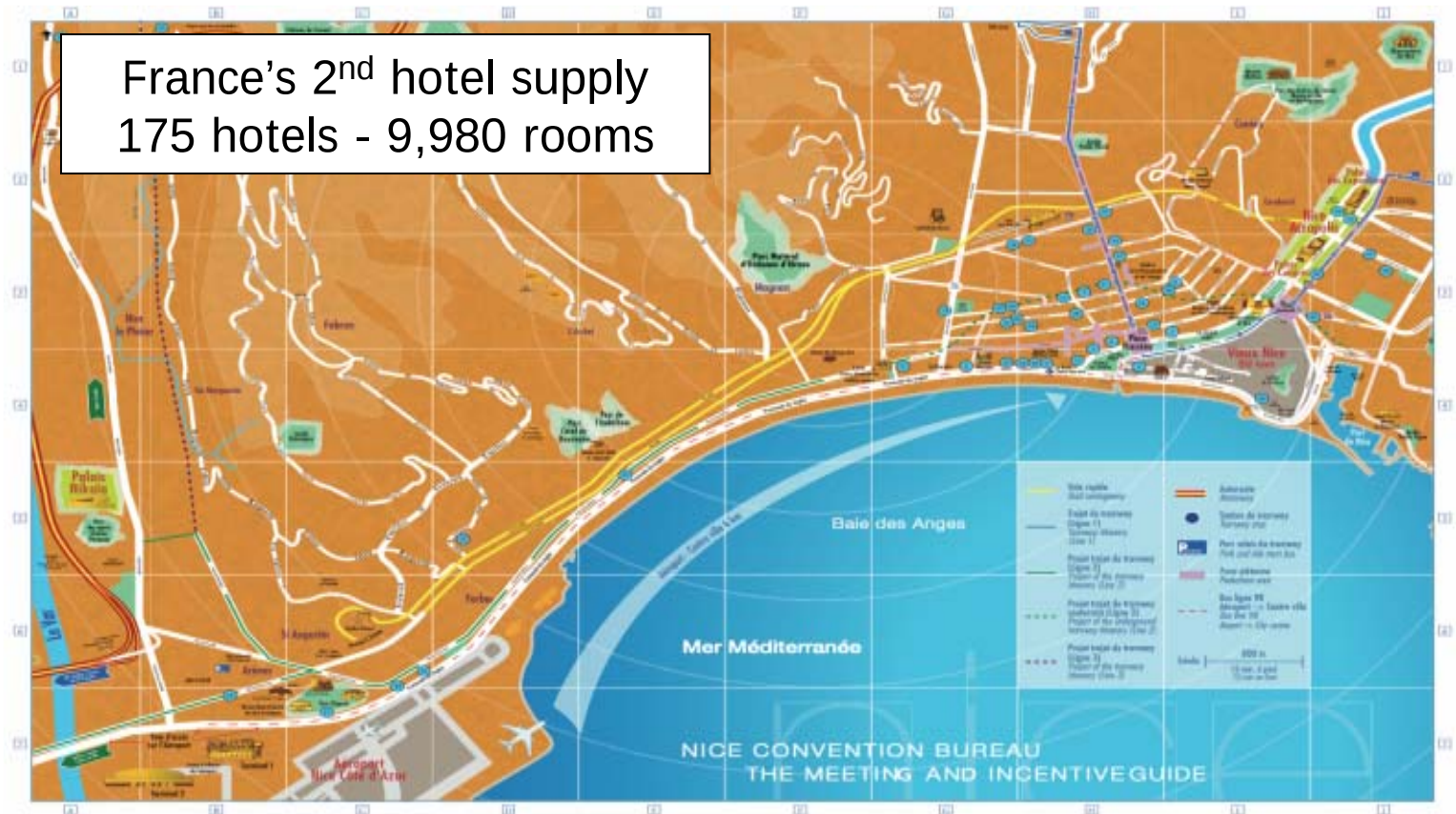
Selected period:
May 27 – 31, 2019

NICE – a strategic positioning



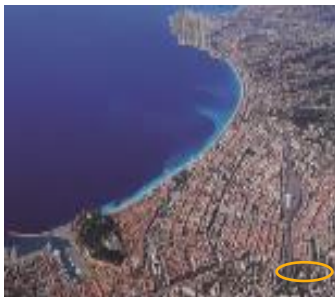
Hotel Accommodations in NICE

France's 2nd hotel supply
175 hotels - 9,980 rooms



Located in the heart of a breathtaking natural setting, Nice - Capital of the French Riviera - offers a wide diversity between the sea and the mountains. The city cultivates an authentic Mediterranean charm and provides endless possibilities for activities and visits...

NICE Acropolis Congress Centre



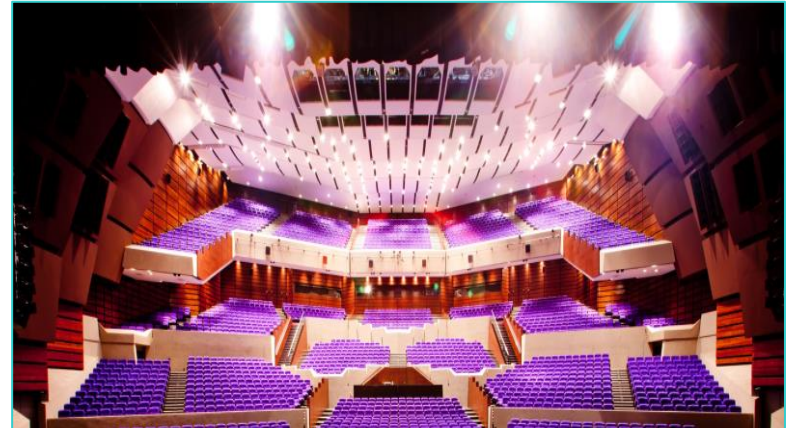
6 km & 15 mn away from NICE INTERNATIONAL AIRPORT (NCA)

Located in the heart of the city

Last refurbishments: 2012 (Overhaul of the facility. 80% completed)

Certified **ISO 14001** since January 1, 2014

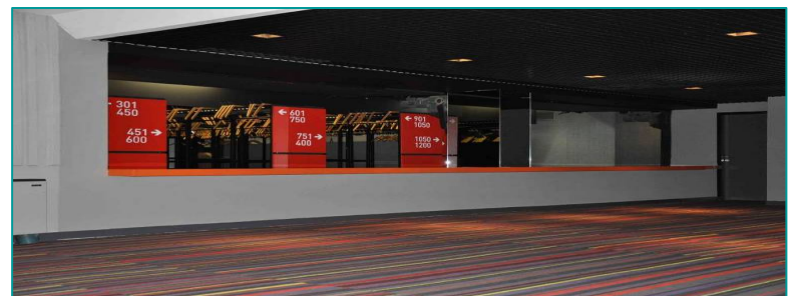
NICE Acropolis Congress Centre



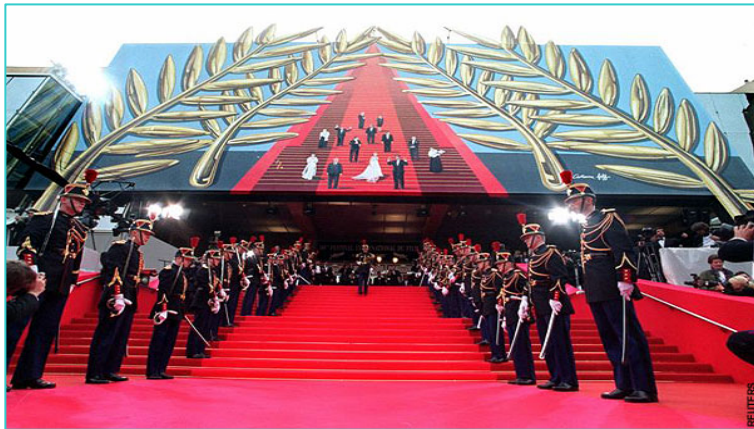
28 meeting rooms

Poster area (400 panels)

Coffee breaks, lunches and social event on site



Sightseeing around NICE



MAY – JUNE

Monaco F1 Grand Prix

Cannes Film Festival



NICE Acropolis Congress Centre



SEE YOU SOON IN NICE!

**E-MRS IUMRS ICAM CONFERENCE
NICE-ACROPOLIS Convention Centre
MAY 27 – 31, 2019**



6th World Materials Summit

Council of Europe, Strasbourg – 20th & 21st November 2017

Forum for Next Generation Researchers

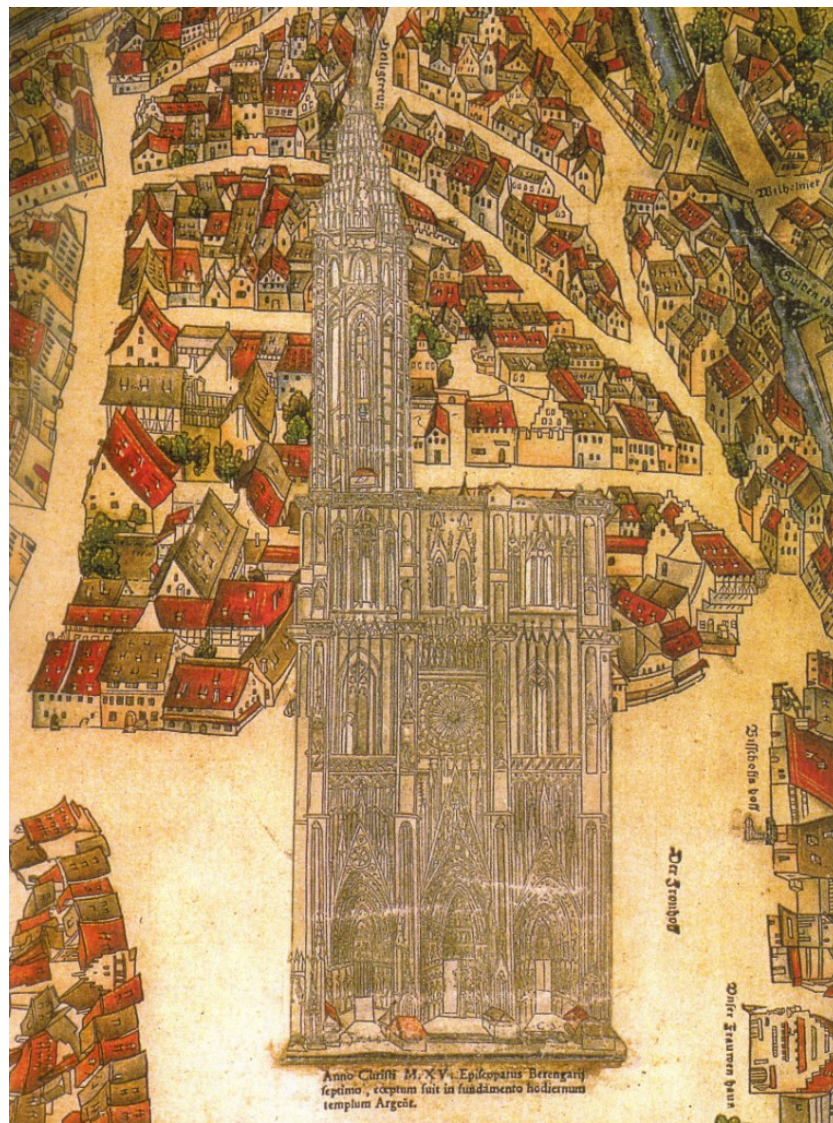
European Youth Centre - 18th & 19th November, 2017



6th WORLD MATERIALS SUMMIT

MATERIALS INNOVATION FOR THE GLOBAL CIRCULAR ECONOMY AND SUSTAINABLE SOCIETY

Council of Europe
20th & 21st Nov, 2017



In partnership with:



Africa



Australia



Brazil



India



Japan



Korea



Mexico

MRS
Russia
Russia



Singapore



Taiwan



6th WORLD MATERIALS SUMMIT

MATERIALS INNOVATION FOR THE GLOBAL CIRCULAR ECONOMY AND SUSTAINABLE SOCIETY

Council of Europe
20th & 21st Nov, 2017

OBJECTIVES

The biannual World Materials Summit has two main objectives:

1. contribute to the creation of a world scientific Materials Community;
2. inform policy makers of global world issues.

The Summit rapidly developed as a tri-societies event involving C-MRS, (China) and MRS (USA). The International Union of Materials Research Societies (IUMRS) was invited to join, as well as several additional international partners, including EUREKA/Metallurgy Europe and ESF.

The Summit meetings have become an established forum for discussing and debating the latest global research, development, innovation and business issues involving advanced materials focusing on a specific area of world concern.



6th WORLD MATERIALS SUMMIT

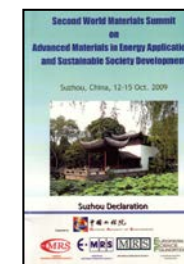
MATERIALS INNOVATION FOR THE GLOBAL CIRCULAR ECONOMY AND SUSTAINABLE SOCIETY

Council of Europe
20th & 21st Nov, 2017

PREVIOUS SUMMITS

The Summits have brought together leading industrialists, politicians, research directors and policy makers to discuss problems and identify the materials and related business models that will undoubtedly shape the future economies of every nation.

1. The inaugural World Materials Summit (I.WMS) was held in LISBON (PORTUGAL) on October 4th and 5th, 2007.
2. This was followed by the 2nd World Materials Summit on Advanced Materials in Energy Applications and Sustainable Society Development in Suzhou / SHANGHAI (CHINA) between 12nd -15th October 2009.
3. The 3rd event was held in WASHINGTON DC (USA) on the 8th - 12th October 2011. The Summit increased its impact by including an invited group of 36 Young Researchers, selected worldwide, to participate in the Summit following two days of lectures by an international team of eminent scientists.



6th WORLD MATERIALS SUMMIT

MATERIALS
INNOVATION FOR
THE GLOBAL
CIRCULAR ECONOMY
AND SUSTAINABLE
SOCIETY

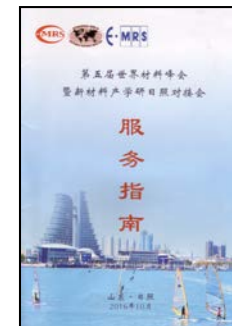
Council of Europe
20th & 21st Nov, 2017

PREVIOUS SUMMITS

4. The 4th World Materials Summit was held in STRASBOURG (FRANCE) 15-17th October 2013. Again an identical forum for the next generation of researchers was included.



5. The 5th WMS on Advanced Materials for Sustainable Society Development took place in RIZHAO / SHANDONG (CHINA) 18th-20th October 2016.



6th WORLD MATERIALS SUMMIT

MATERIALS INNOVATION FOR THE GLOBAL CIRCULAR ECONOMY AND SUSTAINABLE SOCIETY

Council of Europe
20th & 21st Nov, 2017

6th WORLD MATERIALS SUMMIT

The Summit will focus on five key sectors of Materials and the Circular Economy for a Sustainable Society and a sustainable environment.

The topics on which attention will be focused are:

1. ENERGY SUPPLY FOR THE FUTURE FOR MEGACITIES (including renewable and nuclear generation, nuclear waste storage, smart grids, large energy storage, ...)
2. ENERGY SUPPLY FOR DEVELOPING COMMUNITIES (including renewable sources and energy storage)
3. CIRCULAR ENERGY ENHANCEMENT (raw materials, rare earths, solar fuels from CO₂, catalysts, batteries...)
4. FROM MATERIALS TO SYSTEMS FOR THE ICT SOCIETY (smart buildings and cities, flexible electronics, transportation...)
5. DISRUPTIVE MATERIALS FOR THE FUTURE (3D additive, Nanohealth...)

The Summit will include ROUND TABLE events involving specialists together with the views and perspective of the young researchers, all of which will be included in the agenda and report on the outcome of the Summit which will be distributed worldwide.



6th WORLD MATERIALS SUMMIT

MATERIALS INNOVATION FOR THE GLOBAL CIRCULAR ECONOMY AND SUSTAINABLE SOCIETY

Council of Europe
20th & 21st Nov, 2017

SCIENTIFIC PROGRAMME – Day 1

Monday November 20th, 2017

PLENARY SESSION	
Meeting Room	
9:00	WELCOME ADDRESSES
Session Chair	George KIRIAKIDIS, President E-MRS, Greece
9:00	Gabriella BATTAINI-DRAGONI, Deputy Secretary General, Council of Europe
	Jerzy BUZEK, Past President European Parliament, President ITRE Committee, Brussels
	Michel DENEKEN, President, University of Strasbourg, France
	Elvira FORTUNATO, Vice-Chair of the European High Level Group –SAM (Brussels)
	Yafang HAN, Secretary General MRS – CHINA (C-MRS) and President Elec. IUMRS
	Soo Wahn LEE, President IUMRS, Korea
	Philippe VANRIE Chef Secretariat EUREKA/MOBILITY, Belgium
9:40	CHALLENGES
	GLOBAL MATERIALS CHALLENGES
Session Chair	B. FRIEDRICH, European Institute of Technology, KIC Raw Materials/EUREKA Director, IME-RWTH Aachen, Germany
9:40	PERSPECTIVES IN CHEMISTRY TOWARDS COMPLEX MATERIALS J.-M. LEHN, Nobel Laureate in Chemistry, University Strasbourg, France
10:05	ENERGY AND CLIMATE CHANGE J. LOUGHHEAD, Chief Scientist Adviser at the Department of Business Energy and Industrial Strategy, London, UK
10:30	WASTEWATER: THE LESSONS LEARNED FROM AN UNTAPPED RESOURCE. THE UN WORLD WATER DEVELOPMENT REPORT 2017 S. UHLENBROOK, Director, Programme Office on Global Water Assessment, UNESCO
10:55	COFFEE BREAK
Session Chair	Soo Wahn LEE, President IUMRS, Korea
11:15	ORGANIC SEMICONDUCTORS FOR ELECTRONIC DEVICES A.B. HOLMES, Fellow BIO21 Institute, University Melbourne, President of the Academy of Sciences, Australia
11:40	SYSTEMS BUILT ON FOIL TECHNOLOGY FOR SELF-SUSTAINABLE MOBILE APPLICATIONS R. MARTINS, University Lisbon, Portugal and past President E-MRS and Senate
12:05	CIRCULAR ECONOMY
Session Chair	S. UHLENBROOK, Director, Programme Office on Global Water Assessment, UNESCO

12:05	GREEN MICROFACTORIES: PRODUCTS FROM WASTE V. SAHAJWALLA, Director SMART, University of NSW, Kensington, Sydney, Australia
12:30	B. FRIEDRICH, European Institute of Technology, KIC Raw Materials/EUREKA Director, IME-RWTH Aachen, Germany
12:55	LUNCH (Council of Europe)
14:30	ENERGY CHALLENGES
Session Chair	F. PAN, President Academy of Sciences, Chongqing, China
14:30	TRENDS IN NUCLEAR REACTORS B. RAJ, National Institute of Advanced Studies, Bangalore, India and former President of the Academy of Engineering, New Delhi, India
14:55	STORAGE AT THE THRESHOLD: Li-ion BATTERIES AND BEYOND G. CRABTREE, Director Joint Center for Energy Storage Research (JCESR), University of Illinois at Chicago, ANL, Argonne, USA
15:20	CO2: A RAW MATERIAL FOR SOLAR FUEL? J.R. MORANTE, Director IREC, Barcelona, Spain
15:45	THE CURRENT STATUS AND FUTURE HIGH PENETRATION SCENARIO AND ROADMAP OF RENEWABLE ENERGY H. XU, Chinese Academy of Sciences Institute of Electrical Energy (IEE), Beijing, China
16:10	COFFEE BREAK
16:30	MATERIALS RELATED SOLUTIONS FOR INDUSTRY
Session Chair	Yafang HAN, Secretary General MRS – CHINA (C-MRS) and President Elec. IUMRS
16:30	NEW MATERIALS : KEY TO INNOVATION IN RENEWABLE ENERGY SYSTEMS H. BOLT, Director, Forschungszentrum Jülich, Germany
16:55	CAN Li BATTERIES SOLVE THE e-MOBILITY PROBLEM? A. YU-Min PENG, Vice-President ITRI, Taipei, Taiwan
17:20	THE ROAD TO SUSTAINABLE PERSONAL MOBILITY : A NEW DNA FOR THE AUTOMOBILE A. TAUB, Director College of Engineering, University Michigan, Ann Arbor, USA
17:45	3D ADDITIVE CONSTRUCTION M. SCHÄFER, SIEMENS Corporate Technology, Berlin, Germany
18:10	RAW MATERIALS NEEDS 2030 : A EUROPEAN ANALYSIS ???, Fraunhofer Institute - ISI, Germany
18:35	ROLE OF ADVANCED MATERIALS IN THE FUTURE AIRCRAFT PROPULSION A. EPSTEIN, Vice-President of Technology Environment, Pratt & Whitney, Materials and Processes Engineering, East Hartford, United States
19:00	END FIRST DAY – Transfer to hotels



6th WORLD MATERIALS SUMMIT

MATERIALS INNOVATION FOR THE GLOBAL CIRCULAR ECONOMY AND SUSTAINABLE SOCIETY

Council of Europe
20th & 21st Nov, 2017

SCIENTIFIC PROGRAMME – Day 2

Tuesday November 21st 2017

TECHNICAL SESSIONS Meeting Room	
9:00	SESSION 1: RECYCLING OUR COMMON FUTURE REPLACEMENTS
Session Chair	Jim WILLIAMS, Vice President Australian Academy of Science
9:00	RAW MATERIALS SUSTAINABILITY AND INDUSTRIAL PERSPECTIVES E. LOX, UMICORE, Olen, Belgium
9:25	RARE EARTHS FREE CATALYSTS FOR CARS D. WENG Tsinghua University, Beijing, China
9:50	SOLAR FUEL FOR A CO₂ CIRCULAR ECONOMY K.-B YOON, Korea Centre for Artificial Photosynthesis, Sogang University, Seoul, South Korea
10:15	WATER: RECYCLING AND PURIFICATION Vittorio PRIVITERA, CNR IMM, Catania, Italy
10:40	COFFEE BREAK
	PARALLEL SESSION I
11:00	SESSION 2: FROM MATERIALS TO SYSTEMS FOR MEGACITIES //
Session Chair	D. WENG, Tsinghua University, Beijing, China
11:00	SMART CITIES AND INTELLIGENT BUILDINGS G. CREAN, Advisor of the Deputy Prime Minister of Economy, Luxembourg
11:25	SMART GRIDS G.C. CHI, Taiwan Smart Grid Industry Association (TSG-IA), Taipei, Taiwan
11:50	RENEWABLE ELECTRICITY STORAGE (German Power – to-x) Rüdiger A. EICHEL, Institute of Energy & Climate Research, IEK-9: Fundamental Electrochemistry, Forschungszentrum Juelich, Germany
12:15	NUCLEAR HAS BEEN ADOPTED BY CERTAIN COUNTRIES: SOLUTIONS FOR WASTE MANAGEMENT R. EWING, Dept. of Geological Science, Stanford University, Palo Alto, United States
12:40	LUNCH
	PARALLEL SESSION II
11:00	SESSION 3: FROM MATERIALS TO SYSTEMS FOR SMALLER COMMUNITIES AND INDIVIDUAL MOBILITY //
Session Chair	Chennupati JAGADISH, President A-MRS, Australia
11:00	RENEWABLE ENERGIES IN RURAL AREAS J. MARTINEZ-DUART, Madrid University, Spain

11:25	ELECTRIC MOBILITY: POINT OF VIEW OF INDUSTRY A. HINTENNACH, DAIMLER, Germany
11:50	CARBON NANOMATERIALS FOR GREEN CATALYSIS AND CO₂ EMISSION CONTROL Z. ISMAGILOV, Institute of Coal Chemistry and Material Science, Kemerovo (Russia)
12:15	1 case left for ?
12:40	LUNCH
	JOINT SESSION
14:00	SESSION 4: DISRUPTIVE MATERIALS FOR THE FUTURE
Session Chair	A. TAUB, Director College of Engineering, University Michigan, Ann Arbor, USA
14:00	FLEXIBLE ELECTRONICS IN TEXTILE Jon Min KIM, Electrical Engineering, Cambridge University, United Kingdom
14:25	ADDITIVE 3D CONSTRUCTION Douglas C. HOFFMANN, NASA Jet Propulsion Laboratory, California Institute of Technology, PASADENA, Ca, United States
15:50	NANOMATERIALS FOR HEALTH O.N. DE OLIVEIRA, Sao Carlos Physics Institute, Sao Paulo University, Brazil
16:15	INTERNATIONAL SITUATION: STATUS OF NANOMEDICINE B. LOEFFLER, CEO CLINAM Foundation, Basel, Switzerland
15:40	HYDROGEN FROM ENZYMES M. FONTECAVE, Laboratoire de Chimie des Processus Biologiques, Collège de France, Paris, France
16:05	POWER ELECTRONIC SEMICONDUCTOR MATERIALS FOR AUTOMOTIVE APPLICATIONS-SiC, GaN, Ga₂O₃ and Diamond P. WELLMANN, Department of Materials Science and Engineering, University of Erlangen-Nürnberg, Germany
16:30	ROUND TABLE: CRUCIAL IMPORTANCE OF MATERIALS FOR A SUSTAINABLE SOCIETY IN A GLOBAL CIRCULAR ECONOMY. CASE STUDY: ENERGY MIX, STORAGE & RECYCLING
Panel	F. WAGNER, Past President European Physical Society, Germany R. EWING, Dept. of Geological Science, Stanford University, Palo Alto, United States B. RAJ, National Institute of Advanced Studies, Bangalore, India and former President of the Academy of Engineering, New Delhi, India F. PAN, Chongqing University, President of Chongqing Academy of Science & Technology, China Y. WU, (China Iron & Steel Research Institute Group, Advanced Technology & Materials Co. Ltd), China G. CRABTREE, Director Joint Center for Energy Storage Research (JCESR), University of Illinois at Chicago, ANL, Argonne, USA
17:30	OUTCOME AND CONCLUSIONS J. BUZEK, Past President of the European Parliament, President of the ITRE Committee, Poland C. MOEDAS, European Commissioner for Science, Research and Innovation at the European Commission, Portugal XXX... ?



FORUM FOR NEXT GENERATION RESEARCHERS

MATERIALS
INNOVATION FOR THE
GLOBAL CIRCULAR
ECONOMY AND
SUSTAINABLE SOCIETY

European Youth Centre
18th & 19th Nov, 2017



In partnership with:



Africa



Australia



Brazil



India



Japan



Korea



Mexico

MRS
Russia
Russia



Singapore



Taiwan



FORUM FOR NEXT GENERATION RESEARCHERS

MATERIALS INNOVATION FOR THE GLOBAL CIRCULAR ECONOMY AND SUSTAINABLE SOCIETY

European Youth Centre
18th & 19th Nov, 2017

FORUM FOR NEXT GENERATION RESEARCHERS

In addition, the Summit involves the participation of the outcomes of a two day Young Researchers Forum which precedes the Summit.

Organisers:

- Baldev RAJ, National Institute of Advanced Sciences, Bangalore (India) – **Chairman**
- Jacques AMOUROUX, Univ. P. et M. Curie, Paris (France) & E-MRS – **Scientific Coordinator**
- Hans FECHT, University of Ulm (Germany) & EUREKA
- Lan FU, Australian National University, Canberra (Australia)
- Yafang HAN, BUAA, Beijing (China)
- Martin HYNES, ESF President, Strasbourg (France)
- Elton KAUFMANN, ANL, Argonne (USA)
- Malgorzata LEWANDOWSKA, WUT, Warsaw (Poland) & E-MRS
- Rodrigo MARTINS, Uninova, Lisbon (Portugal) & E-MRS
- Juan R. MORANTE, Director IREC, Barcelona (Spain) & E-MRS
- Sharath SRIRAM, RMIT University, Melbourne (Australia)
- Peter WELLMANN, University of Erlangen (Germany) & E-MRS



SCIENTIFIC PROGRAMME – Day 1

FORUM FOR NEXT GENERATION RESEARCHERS

MATERIALS INNOVATION FOR THE GLOBAL CIRCULAR ECONOMY AND SUSTAINABLE SOCIETY

European Youth Centre
18th & 19th Nov, 2017

SATURDAY NOVEMBER 18 th , 2017 AFTERNOON	
Around noon	ARRIVAL, REGISTRATION AND LUNCH
14:00	OPENING OF THE WORKSHOP OBJECTIVES BY THE WORKSHOP ORGANIZERS
Chairman	Baldev RAJ National Institute of Advanced Sciences, Bangalore (India) and former President Academy of Technology (India)
Scientific Co-ordinator	Jacques AMOUREUX Université P. et M. Curie, Paris (France) & E-MRS
International Organizing Team	Hans FECHT , University of Ulm (Germany) & EUREKA Lan FU , Australian National University, Canberra (Australia) Yafang HAN , BUAA, Beijing (China) Martin HYNES , ESF President, Strasbourg (France) Elton KAUFMANN , ANL Argonne (USA) Malgorzata LEWANDOWSKA , WUT, Warsaw (Poland) & E-MRS Rodrigo MARTINS , Uninova, Lisbon (Portugal) & E-MRS Juan R. MORANTE , Director IREC, Barcelona (Spain) & E-MRS Sharath SRIRAM , RMIT University, Melbourne (Australia) Peter WELLMANN , University of Erlangen (Germany) & E-MRS
14:30	SELF INTRODUCTION BY THE YOUNG RESEARCHERS AND DISPLAY OF POSTERS
15:30	1st LECTURE G. PADELLETI HERACLES PROJECT, Roma (Italy) Analytical Characterisation of Monuments by Satellites.
	SESSION 1: DECARBONATED ENERGY AND STORAGE
16:00	2nd LECTURE J.R. MORANTE Director IREC, Barcelona (Spain) & E-MRS Materials for Green Energy.
16:30	3rd LECTURE J. AMOUREUX University P. et M. Curie, Paris (France) & E-MRS Energy Storage, Water Consumption and Megacities.
17:00	4th LECTURE B. RAJ National Institute of Advanced Sciences, Bangalore (India) and former President Academy of Technology (India) Developments of Nuclear Energy.

17:30	5th LECTURE R. EWING Stanford University, Stanford (USA) Projecting Risks into Future: What can we learn from failed systems ?
18:00	6th LECTURE Lan FU Research School of Physics and Engineering, The Australian National University, Canberra (Australia) Semi-Conductor Nanowires for Photovoltaic Applications.
18:30	GENERAL DISCUSSION
Moderator	E. KAUFMANN ANL Argonne (USA)
19:30	DINNER
20:30	PRESENTATION OF THE POSTERS (A 2nd PRESENTATION WILL BE HELD AT TE SUMMIT)



FORUM FOR NEXT GENERATION RESEARCHERS

MATERIALS INNOVATION FOR THE GLOBAL CIRCULAR ECONOMY AND SUSTAINABLE SOCIETY

European Youth Centre
18th & 19th Nov, 2017

SCIENTIFIC PROGRAMME – Day 2

SUNDAY NOVEMBER 19th, 2017 MORNING	
	SESSION 2: STRATEGIC MATERIALS, CIRCULAR ECONOMY
9:00	7th LECTURE Z. ISMAGILOV Institute of Coal Chemistry and Material Science, Kemerovo (Russia) Carbon Dioxide Utilisation by Catalytic Reactions a Way for Low Carbon Future Development.
9:30	8th LECTURE Y. HAN BUAA, Beijing (China) & C-MRS Rare Earth and Recycling Strategy.
10:00	COFFEE BREAK
10:15	9th LECTURE V. SAHAJWALLA University of New South Wales, Kensington (Australia) Materials from Waste.
10:45	10th LECTURE CAE, (China) Industrial Developments of Green Processes.
11:15 Moderator	GENERAL DISCUSSION J. WILLIAMS Australian National University, Canberra (Australia) Vice-President, Academy of Sciences (Australia)
12:00	LUNCH

SUNDAY NOVEMBER 19th, 2017 AFTERNOON	
	SESSION 3: NUMERICAL SOCIETY, FLEXIBLE ELECTRONICS AND NANOMATERIALS

14:00	11th LECTURE H. FECHT University of Ulm (Germany) and EUREKA Bridging the Micro and Nano Worlds.
14:30	12th LECTURE R. MARTINS UNINOVIA, Lisbon (Portugal) Flexible Electronics.
15:00	13th LECTURE J.M. MARTINEZ DUART University of Madrid (Spain) & E-MRS Photovoltaics: Large PV Deployment in Developed and Developing Countries. Centralized vs Distributed Generation.
15:30 Moderator	GENERAL DISCUSSION Sharath SRIRAM, RMIT University, Melbourne (Australia)
15:50	COFFEE BREAK
16:10	14th LECTURE O. N. DE OLIVEIRA University of Sao Paulo, Sao Carlos (Brazil) Nanomaterials and Applications.
16:40	15th LECTURE Gong-Chung CHI Taiwan Smart Grid Industrial Association, Taipei (Taiwan) The Role of Smart Grid to Constructing Green Energy Supply System in Taiwan
17:10	16th LECTURE H.U. HABERMEIER Immediate Past President IUMRS, Stuttgart (Germany), Education Wellbeing and Knowledge Exchanges.
17:40 Moderator	GENERAL DISCUSSION M. HYNES ESF, Strasbourg (France)
18:00	SUMMING UP, CONCLUSIONS AND INFORMATION ON THE SUMMIT
19:00	DINNER

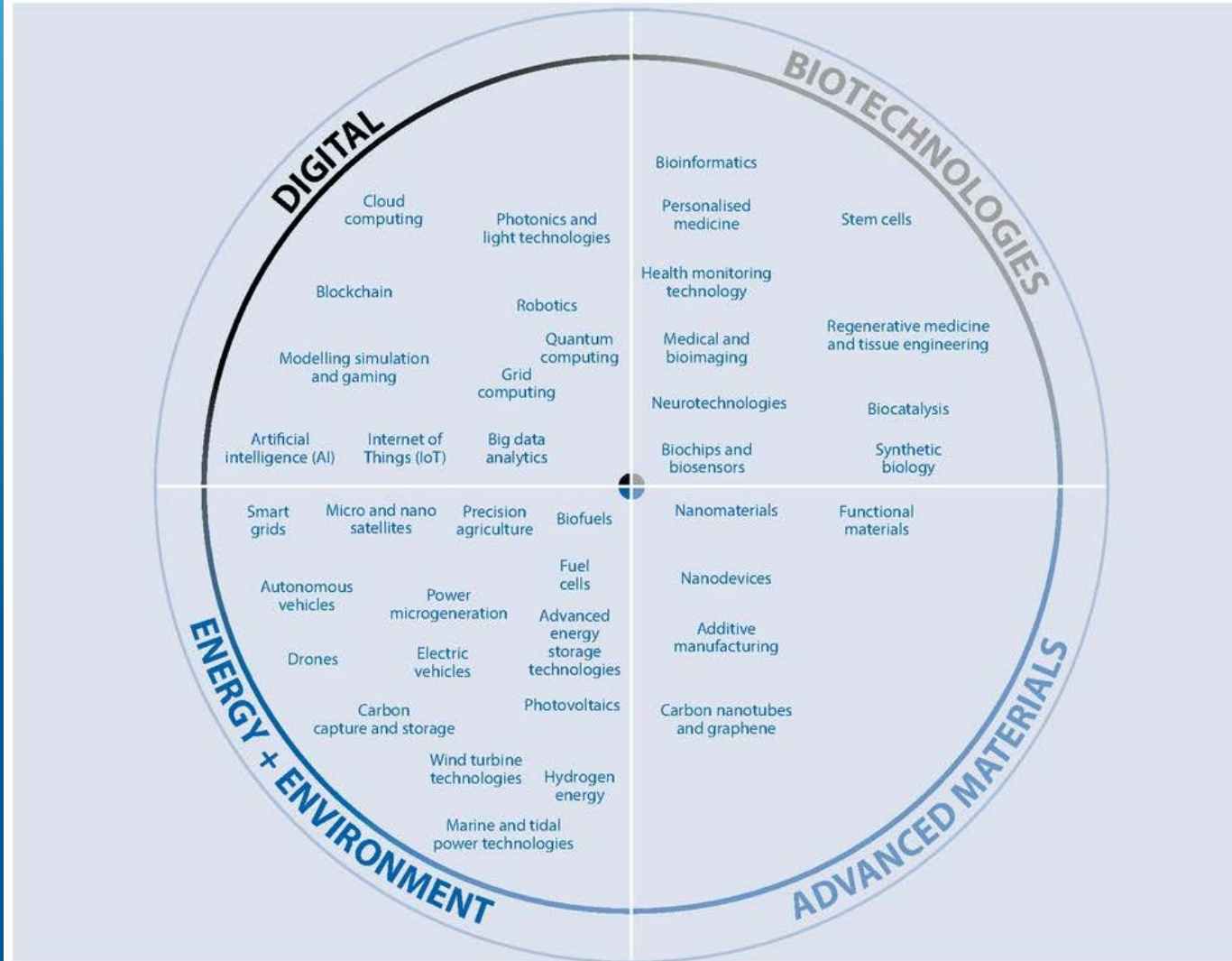


E-MRS INTERNATIONAL

Pr. Rodrigo Martins, Chair of the EMRS Working Group on
European Affairs

TECHNOLOGY TRENDS FOR THE FUTURE: CRUCIAL ROLE OF MATERIALS

Figure 2.1. 40 key and emerging technologies for the future



E-MRS INTERNATIONAL

- ▶ E-MRS is a co-founder with the USA, Japan, India, China, Taiwan and Australia of the INTERNATIONAL UNION OF MATERIALS RESEARCH SOCIETY (IUMRS) which progressively covers the whole world through about 15 large geographical zones.

- ▶ **Today, IUMRS brings together the
World Materials Community**

With frequent contacts, especially through

- Large international conference circulating around the world
 - ICEM (electronics materials)
 - ICAM (advanced materials)
 - Integration of Young Researchers
 - High level Awards
- ▶ THESE INTERNATIONAL CONNEXIONS PERMIT E-MRS TO BE WELL INFORMED ABOUT THE WORLD EVOLUTION IN MATERIALS R+D+T

► A few examples:

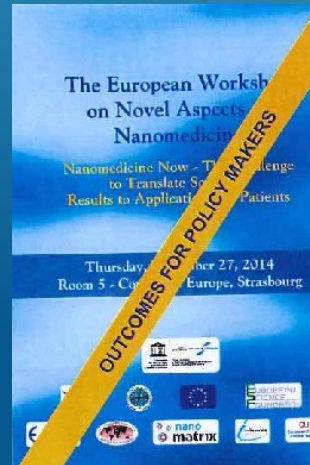
► I. NANOMEDICINE

- EUROPEAN WORKSHOP ON NOVEL ASPECTS OF NANOMEDICINE

Council of Europe, Strasbourg Nov. 27th, 2014

Opened by P. Rübig and A. Correia De Campos

with International participation and « OUTCOMES FOR POLICY MAKERS »



- THERAPIES FOR THE FUTURE: NANOMEDICINE STOA WORKSHOP,
Brussels, Oct. 11th, 2017

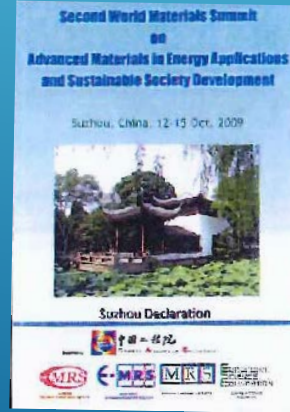
opened by P. Rübig and V. Andriukaitis

► II. WORLD MATERIALS SUMMIT

Launched by E-MRS in 2007



Lisbon,
Portugal



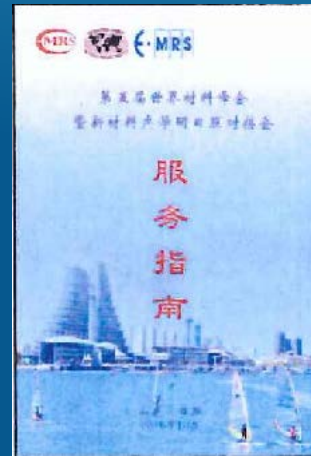
Suzhou,
China



Washington,
United States



Strasbourg, France



Rizhao, China

VI WORLD MATERIALS SUMMIT



FORUM FOR NEXT GENERATION RESEARCHERS VI World Materials Summit

Materials Innovation for the global Economy and Sustainable Society

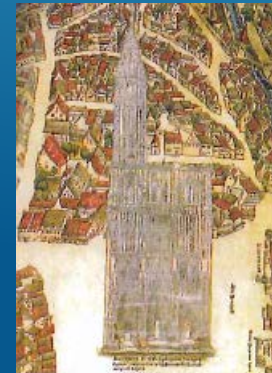
18 – 19 November 2017

Council of Europe – European Youth Centre, Strasbourg, France



MATERIALS INNOVATION FOR THE GLOBAL CIRCULAR ECONOMY AND SUSTAINABLE SOCIETY

Council of Europe Strasbourg – 20th & 21st November 2017



VI WORLD MATERIALS SUMMIT



OBJECTIVES:

- ▶ Discuss at the world level the role that advanced materials can play to solve crucial problems.
- ▶ Analyse the evolutions chosen by major countries worldwide to solve the problems, especially: energy, global warming, health, water.

Views presented by:

- Worldwide selected scientists, academics
 - Young researchers selected worldwide
- ▶ Diffuse the outcomes worldwide to key policy makers, in particular to the European Institutions and MEPs.



EUROPEAN ACADEMY OF SCIENCES
IN SUPPORT OF EXCELLENCE IN SCIENCE AND TECHNOLOGY



Symposium «The Future of Science in the 21st century: Science & Technology for the better future of humankind»

ORGANIZING COMMITTEE:

Rodrigo Martins, Chairman, Alain Tressaud, Co-Chairman

MEMBERS OF THE ORGANIZING COMMITTEE:

H. de Rode (permanent secretary of EURASC); E. Fortunato (FCT-UNL/i3N, Portugal); J. Rocha and A. Silva (U. Aveiro, CICECO); S. Pais (secretary of the Lisbon Academy of Science); C. Salema (Vice President of the Lisbon Academy of Science); F. Santana (President of the Portuguese Academy of Engineering); J. Etourneau (U. Bordeaux, France)

CONTACTS:

EURASC: Ludivine Dubois (eurasc.office@gmail.com); Portugal: Academy of Science of Lisbon - Dr. Sérgio Lourenço (slourenco@acad-ciencias.pt); DCM/CENIMAT - Sara Oliveira, Valéria Gomes and André Fonseca (dcn.secretariado@fct.unl.pt)

October 26th & 27th, 2017

Venue: Academy of Sciences, Lisbon (Portugal)

THURSDAY, OCTOBER 26TH, 2017

08.00 – 08.30 am: Registration

08.30 – 08.55 am: Welcoming speeches - Introducing the Symposium:
Alain Tressaud and **Rodrigo Martins**

Paulo Ferrão, Psdt. of the Portuguese Science and Technology Foundation; **Carlos Moedas**, EU Commissioner

08.55 – 09.25 am: **Alexandre Quintanilha** (Head of Science and Education Committee in the Portuguese Parliament, Lisboa, Portugal)
Introductory lecture: *"Linking peoples of the World through Science"*

SESSION 1 – Sustainable management of natural resources

(Chairman: A. Silva, EURASC)

09.25 – 09.55 am: **Arnold Tukker** (Leiden University, Leiden, Netherlands)
"Sustainable management of natural resources"

09.55 – 10.25 am: **Eric Gaffet** (CNRS, Paris, France)
"Nano - Solutions for sustainable materials management"

SESSION 2 – Eco-efficient transport and modern energy solutions

(Chairman: J. Etourneau, U. Bordeaux)

10.25 – 10.55 am: **Sigurd Wagner** (Princeton University, New Jersey, USA)
"Challenges to realizing an energy economy powered exclusively by sun and wind"

10.55 – 11.25 am: **Adélio Mendes** (FEUP, Porto, Portugal)
"Recent advances in new photovoltaic devices: dye-sensitized and perovskite-based solar cells"

11.25 – 11.40 am: Coffee Break

SESSION 3 – Health and new technologies in life sciences

(Chairman: S. Pais, Lisbon Academy of Science; E. Fortunato, EURASC)

11.40 – 12.10 pm: **Ernst Wagner** (LMU, Munich, Germany),
"Nanomedicine—strategies towards targeted therapy"

12.10 – 12.40 pm: **Daniel Scherman** (UTCBS - CNRS, Paris, France)
"Chemical and Biological Technologies for Health"

12.40 – 13:00 pm: Round Table with moderator: J. Rocha and J. Mano (CICECO)
"Science prospects towards citizens"

13:00 – 02.00 pm: Lunch

SESSION 4 – Potential and challenges of Internet & Robot Ethics

(Chairman: C. Salema, Lisbon Academy of Science)

02.00 – 02.30 pm: **Asunción Gómez-Pérez** (Madrid Polytechnic University, Spain)
"Ontological engineering and data integration"

02.30 – 03.00 pm: **Margherita Venturi** (Bologna University, Bologna, Italy)
"Artificial molecular-level devices and machines"

03.00 – 03.30 pm: **Raja Chatila** (ISIR, Paris, France)
"Robots ethics"

03.30 – 04.00 pm: **Arlindo Oliveira** (IST, Lisboa, Portugal)
"Digital Minds: Science Fiction or Near Future Reality?"

04.00 – 04.30 pm: Coffee Break

SESSION 5 – Science Policy, Communication, and Global Networking

(Chairman: F. Santana, Portuguese Academy of Engineering)

04.30 – 05.00 pm: **Philip Ball** (Editor, London, England)
"The Future of Science"

05.00 – 05.30 pm: **Maria da Graça Carvalho** (EP, Brussels, Belgium)
Conclusive lecture: *"Reducing inequalities: the role of social innovation"*

05.30 – 05.50 pm: Final Round Table with moderators: J. Etourneau (U. Bordeaux) and H. de Rode (EURASC) *"Ethics on Science"*

06.00 – 07.00 pm: General Assembly, EURASC members

08.00 pm: Banquet



10TH ANNIVERSARY OF ERC SESSIONS

(Chairman: J.P. Bourguignon, Psdt of ERC; E. Fortunato, J. Rocha, EURASC)

FRIDAY, OCTOBER 27TH, 2017

- 09.00 – 09.15 am: Introduction to the **ERC 10th Anniversary** by Psdt J.P. Bourguignon
"The role of ERC in boosting Science in Europe"
- 09.15 – 09.45 am: **Yvette van Kooyk** (ERC Advanced Grant, Amsterdam, Netherlands)
"Will nanovaccines be the new generation of cancer vaccines?"
- 09.45 – 10.15 am: **Timothy M. Vogel** (UMR - CNRS, Lyon, France)
"The European Science Network"
- 10.15 – 10.35 am: **Lúís Pereira** (ERC - Starting Grant, CENIMAT/i3N, Portugal)
- 10.35 – 10.55 am: Coffee Break
- 10.55 – 11.15 am: **Pedro Barquinha** (ERC - Starting Grant, CENIMAT/i3N, Portugal)
- 11.15 – 11.35 am: **Mara G. Freire** (ERC - Starting Grant, CICECO, Portugal)
- 11.35 – 12.25 pm: Round Table with moderator: C. Ribeiro (Champalimaud Foundation)
"The role of ERC in the research career and groundbreaking work"
- 12.25 – 01.45 pm: Lunch

CEREMONY OF AWARDS OF THE EUROPEAN ACADEMY OF SCIENCES

(Chairman: A. Tressaud, H. de Rode, R. Martins, EURASC; P. Ferrão (President of the Portuguese Science and Technology Foundation); Representative of Portuguese Government)

- 01:45 – 02.15 pm: Presentation of diplomas for new members
- 02.15 – 02.45 pm: Lecture Leonardo da Vinci medal, **Vincenzo BALZANI** (Bologna Univ., Italy), *"Chemistry and creativity"*
- 02.45 – 03.15 pm: Lecture BPM in Chemistry, **Michael MINGOS** (Oxford Univ., UK)
- 03.15 – 03.45 pm: Lecture BPM in Engineering, **Nikita MOROZOV** (RAS, Moscow, Russia)
- 03.45 – 04.00 pm: Coffee Break
- 04.00 – 04.30 pm: Lecture BPM in Materials Science, **Luis M. LIZ-MARZAN** (IKERBASQUE, Bilbao, Spain), *"Colloidal Nanoplasmonics"*
- 04.30 – 05.00 pm: Lecture BPM in Mathematics, **Felix OTTO** (MPI MIS, Leipzig, Germany)
- 05.00 – 05.30 pm: Lecture BPM in Life Sciences, **Francisco J. AYALA** (UC-Irvine, USA)
- 05.30 – 06.00 pm: Conclusion of the Event

WITH THE SUPPORT OF:





Horizon 2020 Work Programme for R&I 2018-2020

#InvestEUresearch

Dear Madam, Dear Sir,

The **Industrial Innovation Info Days** will be held on **3 and 4 October 2017** in **Brussels**, under the auspices of the European Commission Directorate General for Research & Innovation.

The purpose of this major event, which will gather more than 1000 participants, is to inform stakeholders about activities in the “Key Enabling Technologies” part of Horizon 2020,

The programme will include keynote addresses on current and future investments in EU research & innovation, as well as presentations on upcoming challenges in the area of Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, and Biotechnology.

The Info Days will also involve significant networking activities. During brokerage and matchmaking sessions, participants will have the opportunity to present their project ideas and meet potential partners from similar fields with a view to developing future project proposals.

Stakeholders from Member States are involved in the organisation of the event and will be present to give concrete advice to potential Horizon 2020 applicants.

[Registrations are now open](#) and we warmly encourage you to participate in this event personally and avail of this ideal opportunity to meet new business partners and extend networks. There are **no registration fees**.

On each day of the event, lunch and refreshments will be offered, and at the end of the first day, there will be a networking cocktail.

The programme and the link to registration site can be found on the [website for the event](#). For further information, contact: RTD-NMBP-INFODAYS-2017@ec.europa.eu

We are looking forward to welcoming you to the Industrial Innovation Days.

Research and
Innovation