

# Chapter 6 IUMRS Awards

## 6.1 IUMRS Somiya Award

### 6.1.1 Introduction to Somiya Award



The Sômiya award is named in honor of Dr. Shigeyuki Sômiya, Emeritus Professor of the Tokyo Institute of Technology, and later Dean at Teikyo University of Science and Engineering. Dr. Sômiya is a winner of the MRS Medal and the Japanese Scientific Academic Award.

Professor Sômiya spent his post-graduate years in U.S. and embarked on a series of collaborative research and exchange visits in many countries, starting in 1969 with the U.S.-Japan Workshop in Ceramics -- the very first in materials science. He also actively pursued joint work with colleagues in Europe, and brought many international materials gatherings to Japan.

### 6.1.2 List of Somiya Award winners

#### Year of 2019

Winners: Prof. Liming Dai  
Affiliation/Country or Area: USA  
Recommended by (Society): Case Western Reserve University  
Place of award ceremony: Nice, France

#### Year of 2017

Winners: Prof. Chennupati Jagadish  
Affiliation/Country or Area: Australia  
Recommended by (Society): Australian National University  
Place of award ceremony: Kyoto, Japan

#### Year of 2015

Winners: Prof. Ruslan Z. Valiev, Prof. Yuntian T. Zhu  
Affiliation/Country or Area: Russia, USA  
Recommended by (Society): Ufa State Aviation Technical University, North Carolina State University  
Place of award ceremony: Jeju, Korea

#### Year of 2012

Winners: Prof. John A. Kilner  
Affiliation/Country or Area: UK  
Recommended by (Society): Imperial College London  
Place of award ceremony: Yokohama, Japan



International Union of  
Materials Research Society (IUMRS)

#### Year of 2009

Winners: Prof. Mildred S. Dresselhaus, Prof. Ado Jorio, Dr. Mauricio Terrones, Prof. Riichio Saito, Prof. Morinobu Endo, Prof. Marcos Pimenta, Prof. Antonio G. Souza Filho

Affiliation/Country or Area: USA, Brazil, Mexico, Japan, Japan, Brazil, Brazil

Recommended by (Society): MIT, Universidade Federal de Minas Gerais, Instituto Potosino de Investigacion Cientificay Technologica, Tohoku University, Shinshu University, Universidade Federal de Minas Gerais, Universidade Federal do Ceara

Place of award ceremony: Rio de Janeiro, Brazil

#### Year of 2007

Winners: Prof. Ivan K. Schuller, Prof. Yvan Bruynseraede

Affiliation/Country or Area: USA, Belgium

Recommended by (Society): University of California, San Diego, Catholic University of Leuven

Place of award ceremony: Bangalore, India

#### Year of 2005

Winners: Prof. Terence Langdon, Prof. Zenji Horita

Affiliation/Country or Area: USA, Japan

Recommended by (Society): University of Southern California, Kyushu University

Place of award ceremony: Yokohama, Japan

#### Year of 2004

Winners: Dr. C. N. R. Rao, Dr. Anthony Cheetham

Affiliation/Country or Area: India, USA

Recommended by (Society): JNCASR, Bangalore, University of California at Santa Barbara

Place of award ceremony: San Francisco, USA

#### Year of 2003

Winners: Dr. Klaas de Groot, Prof. Fu Zhai Cui

Affiliation/Country or Area: Holland, China

Recommended by (Society): IsoTis NV, Tsinghua University

Place of award ceremony: Yokohama, Japan

#### Year of 2001

Winners: Dr. Antoni Tomsia, Jose Moya

Affiliation/Country or Area: USA, Spain

Recommended by (Society): Berkeley, USA, E-MRS

Place of award ceremony: Cancun, Mexico

#### Year of 2000

Winners: Dr. X.R. Wu, Dr. J.C. Newman, Jr.

Affiliation/Country or Area: China, USA

Recommended by (Society): Beijing Institute of Aeronautical Materials, NASA Langley Research Centre

Place of award ceremony: Strasbourg, France

## 6. 2 IUMRS- MRS-Singapore Young Research Award

For recognizing the outstanding contributions made by young researchers on materials science, IUMRS and MRS-Singapore have jointly instituted the “IUMRS - MRS Singapore Young Researcher Award”.

The International Conference of Young Researchers on Advanced Materials (ICYRAM) is an initiative of the International Union of Materials Research Societies (IUMRS) and constitutes the inaugural meeting of the Global Materials Network (GMN). It is a conference of-, by- and for- Young Researchers.

The mission of ICYRAM is to provide a platform for researchers under the age of 40 to present technical findings of their research, to network within the international community of other young researchers, and to increase the breadth of their general materials-based knowledge.

The first ICYRAM was organized by MRS-Singapore in Singapore, 2012, aimed to include a wide range of materials research topics, creating nearly 30 independent sessions, arranged under six broad themes: Biomaterials & Healthcare, Carbon-based Materials, Energy & the Environment, Electronic Materials, Magnetic & Spintronic Materials, and Optical Materials. It is the hope that each of the themes will take on the feel of a smaller workshop, promoting the free exchange of ideas and professional camaraderie within and amongst the integrated sessions.

The subsequent ICYRAM conferences were held during 2014, 2016 and 2018 in Haikou China; Bengaluru, India; and Adelaide, Australia, respectively. They were organized by respective Materials Research Societies, and the IUMRS – MRS Singapore Young Researcher award was given out physically at those conferences.

The award package consists of S\$5,000 (Singapore dollars five thousand) cash prize, a presentation trophy, and a certificate. The recipient of the award must be personally present at the IUMRS-ICYRAM and give an award lecture. No travel grant is provided by the conference organizers. However, accommodation at one of the modest conference hotels for the conference duration and a waiver of the registration fee is provided.

Those who wish to be considered for the “IUMRS - MRS Singapore Young Researcher Award” must submit their nomination to the Award Subcommittee Chair, at [awards@mrs.org.sg](mailto:awards@mrs.org.sg). Peer- and organizational- nominations are also welcome subject to the nominee agreeing for the terms and conditions of the award. The submitted nomination package must provide the following: 1. Curriculum Vitae (2-pages maximum) including evidence for the date of birth 2. List of recent key publications (2-pages maximum) 3. Summary of achievements, awards and honors (1-page maximum) 4. Name and brief credentials of the three distinguished materials scientists whom nominee has contacted to provide confidential support letters highlighting the creativity of the nominee and the impact his or her research work has created. These letters must be sent by the supporters directly to Award Subcommittee Chair at [awards@mrs.org.sg](mailto:awards@mrs.org.sg) for the nomination to be considered. The decision of the award subcommittee is final and no enquires will be entertained.

The award for the Year 2012 went to Prof. Xiangfeng Duan from the University of California Los Angeles.

The one held in China in 2014 attracted 48 nominations from different countries. Prof. Ali Khademhosseini from the Harvard Medical School, USA won the award. The finalists are: Prof. Ariando, National University of Singapore, Singapore; Prof. Sergio Brovelli University of Milano-Bicocca, Italy; Prof. Yi Cui, Stanford University, USA, Prof. Jiaying Huang, Northwestern University USA, Prof. Ajayan Vinu, The University of Queensland, Australia and Prof. Xun Wang, Tsinghua University, China.

The most recent one held at Adelaide attracted 35 nominations from 31 different institutes representing 9 countries - Australia, Singapore, China, USA, Switzerland, Germany, Brazil, India & Thailand. The winner was Prof. Andrea Alù from the City University of New York, USA. The following four others are recognized as finalists: James Analytics from UC Berkeley, USA; Laura Na Liu from the University of Heidelberg, Germany; Philip Moll from EPFL, Switzerland and Huiying Yang from Singapore University of Technology and Design.

The rationale for selection of the winners was interdisciplinary and innovative research demonstrating high level of excellence and distinction contributing to the development and fundamental understanding of the concerned topic.



International Union of  
Materials Research Society (IUMRS)



Prof Tan Chorh Chuan, President of National University of Singapore and Prof B.V.R. Chowdari at the Opening Ceremony of inaugural IUMRS-ICYRAM on 2 July 2012



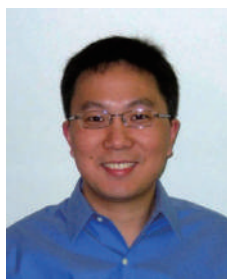
Prof Barry Halliwell, Deputy President of National University of Singapore awarded a medal of Young Research Awards for Prof Xiangfeng Duan at the Award Ceremony of inaugural IUMRS-ICYRAM on 6 July 2012



IUMRS President Prof. Osamu Takai and Prof. B.V.R. Chowdari awarded a medal of Young Research Awards for Prof. Ali Khademhosseini at the Second IUMRS-ICYRAM (International Conferences for Young Researchers on Advanced Materials) in Haikou, China, Oct. 26, 2014

## 6.2.2 List of Young Research Awards

### Year of 2012



Prof. Xiangfeng Duan

Winners: Prof. Xiangfeng Duan  
 Affiliation/Country or Area: USA  
 Recommended by (Society):  
 University of California Los Angeles  
 Place of award ceremony: Singapore

### Year of 2014



Prof. Ali Khademhosseini

Winners: Prof. Ali Khademhosseini  
 Affiliation/Country or Area: USA  
 Recommended by (Society): MIT  
 Place of award ceremony: Haikou,  
 China

Prof. Ali Khademhosseini received a BSc (1999) and MSc (2001) in Chemical Engineering from the University of Toronto and Ph.D. in Bioengineering from the Massachusetts Institute of Technology (2005). Currently, he is an Associate Professor at Harvard-MIT Division of Health Sciences and Technology, Brigham and Women's Hospital, and Harvard Medical School; and an Associate Faculty at the Wyss Institute for Biologically Inspired Engineering at Harvard University. Additionally, he serves as an Adjunct Professor in the Department of Biomedical Engineering at the University of Texas at Austin and a Junior Principal Investigator at Japan's World Premier International – Advanced Institute for Materials Research at Tohoku University.

The Khademhosseini Lab is centered on the development of micro-scale biomaterials and engineered systems to control cellular behaviors for applications in tissue engineering. Current research aims to develop technologies that will control the formation of vascularized tissues with proper micro-architectures and regulate stem cell differentiation within these micro-engineered systems. Professor Khademhosseini will discuss his latest findings in a presentation titled "Wnt5a Conjugated Poly(ethylene glycol)-Gelatin Composite for Vascularized Tissue Engineering" at the AIChE Annual Meeting, which commences on October 28, 2012 in Pittsburgh, Pennsylvania, USA.

Dr. Khademhosseini's contributions have been recognized by over thirty national and international awards. A testament to the interdisciplinary nature of his research, Dr. Khademhosseini was the recipient of early career awards from IEEE (IEEE Engineering in Medicine and Biology award / IEEE Nanotechnology award), AIChE (Colburn Award), and ASME (YC Fung Award); and young investigator awards from the Society for Biomaterials, the Tissue Engineering and Regenerative Medicine International Society – North America, and the American Chemical Society (BIOT Young Investigator Award). He was also awarded the Royal Society of Chemistry's 2011 Pioneers of Miniaturization Prize for his work in microscale tissue engineering and microfluidics, the International Union of Pure and Applied Chemistry (IUPAC) Polymer award, and the Society for Laboratory Automation and Screening Innovation award. Dr. Khademhosseini has received an NSF Career award, an Office of Naval Research Young Investigator Award, and the Presidential Early Career Award for Scientists and Engineers, the highest honor given by the US government of early career investigators. He is also a fellow of the American Institute of Medical and Biological Engineering.

### Year of 2018

Winners: Andrea Alù  
 Affiliation/Country or Area: USA  
 Recommended by (Society): City University of New York  
 Place of award ceremony: Adelaide, Australia



## 6.3 Global Leadership and Service Award

### 6.3.1 Introduction to Global Leadership and Service Award

The world community is more interconnected today than ever before, not simply in commerce and trade, but particularly in key integral areas such as energy, environment, health, security, education and economies. Successful future development will require effective and well-informed leadership from governments, institutions, and international companies working together, along with the participation of all citizens. Facing with unprecedented global issues, materials science and engineering is playing a significant, on-going role in innovative development towards a sustainable world for all to live in.

The IUMRS has a mission of supporting excellence in materials research and education, and development of future leaders to work together for a world that has critical needs in order to sustain itself. Accordingly, to promote this mission, IUMRS announced the Global Leadership and Service Award. This Award will be given to individuals who have demonstrated outstanding leadership through service having measurable impact to the global community, relating to materials research and education. Professor Rodrigo Martins will serve as the first chair of the subcommittee on Global Leadership and Service Award for the IUMRS.

### 6.3.2 List of Global Leadership and Service Awards

#### Year of 2015

- Winners: Prof. Mihail Roco, Mr. Christos Tokamanis, Prof. Paul Siffert
- Affiliation/Country or Area: USA, Europe, Europe
- Recommended by (Society): NSF, E-MRS, E-MRS
- Place of award ceremony: Brussels, Belgium

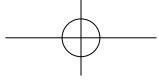
#### Year of 2016

- Winners: Prof. Wan Gang, Prof. Graca Carvalho, Prof. Sukekatsu Ushioda
- Affiliation/Country or Area: China, Portugal, Japan
- Recommended by (Society): Science and Technology of China, E-MRS, National Institute of Materials Science
- Place of award ceremony: Brussels, Belgium

#### Year of 2019

- Winners: Prof. Robert Chang, Dr. Carlos Moedas
- Affiliation/Country or Area: USA, Europe
- Recommended by (Society): Northwestern University, E-MRS
- Place of award ceremony: Nice, France





6.4 Words from Sômiya Award winners

6.4.1 First Sômiya Award Winner in 2000 (Dr. J.C. Newman, Jr., NASA, USA and Xueren Wu, BIAM, China)



Prof. James C.

Dr. J.C. Newman, Jr., Langley Research Center, National Aeronautics and Space Administration (NASA) and Dr. X.R. Wu, Beijing Institute of Aeronautical Materials (BIAM), Chinese Aeronautical Establishment (CAE) were the first recipients of the International Union of Materials Research Society's (IUMRS) Sômiya Award for International Collaboration for their collaborative work on aeronautical materials. A NASA/CAE Reference Publication-1309, May 1994, on "Small-Crack Effects in High-Strength Aluminum Alloys—a NASA/CAE Cooperative Program" and two technical papers were published in 1998 and 1999. Colleagues and co-authors of the research work were: W. Zhao, M.H. Swain, C.F. Ding and E.P. Phillips. Drs. S.L. Venneri, NASA, and C.G. Li, CAE, were program managers.



*Shigeyuki Sômiya (Teikyo University of Science and Technology, Japan) presents the first Sômiya Award to X.R. Wu of the Beijing Institute of Aeronautical Materials, China (right), and James C. Newman of NASA Langley Research Center, USA (left), at the E-MRS-IUMRS-ICEM-2000 meeting in Strasbourg, France, on May 31*  
<https://www.cambridge.org/core/services/aop-cambridge-core/content/view/S0883769400027937>

Photos below show the group in China (BIAM) in 1985 and in United States (NASA Langley) in 1987; and several other photos taken in Strasbourg, France (2000). The NASA/CAE research has helped to develop the small-crack theory for predicting "fatigue" life of engineered metallic materials.



First CAE-NASA Meeting-1985



NASA-CAE Meeting-1987



Memories Photos of IUMRS – 2000

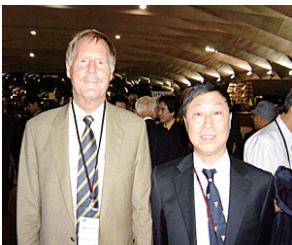
*Emeritus Professor James C. Newman*  
*Mississippi State University*

1 Jim C. Newman, Jr., Richard H. Johnson Chair and Emeritus Giles Distinguished Professor, Department of Aerospace, Mississippi State University, USA.

<http://www.ae.msstate.edu/people/faculty/james-newman>

#### 6.4.2 2003 Sômiya Award winners (Prof. Fuzhai Cui from Tsinghua University, China and Dr. Klaas de Groot, Iso Tis NV, Holland)

##### Under the Support of IUMRS, the Biomimetic Mineralized Collagen Bone Grafts Achieved Success



Prof. Fuzhai Cui (right),  
Tsinghua University, China

Bone defects refer to situations in which the integrity of the phalanx structure is destroyed. The main causes of bone defects include trauma, bone tumors, degenerative diseases, infections, osteomyelitis, and a variety of congenital diseases. Since the ability of bones to repair themselves is limited, the treatment of bone defects is necessary. The identification of proper bone defect repair materials is a goal long-pursued by scientists. Globally, there are 20 million orthopedic surgeries per year, 70% of which need bone grafts for bone defect repair. Clinically, autologous grafts are considered as gold standard for the treatment of bone defects. However, the limited availability and the side effects associated make it compelling to look for alternative sources of bone grafts.

Tissue engineering was first introduced in the 1980s by Langer and Vacanti. It is a principle and technique that applies engineering and life sciences to the design and manufacture of a structure that rebuilds or repairs tissues and organs and maintains or enhances tissue functions. Applying the principle of tissue engineering to the development of bone grafts, bone tissue engineering emerges as an interdisciplinary field. Its emergence brings new hope for bone tissue repair.



It is widely accepted that ideal bone defect repair materials should be characterized by safety, high biocompatibility, excellent biodegradability, and good osteoconductivity. Given that traditional bone defect repair materials (natural polymers, biologically derived bone framework materials, bioactive ceramics, synthetic polymeric materials, and bone substitute materials based on HA) are far from satisfactory, it is important to develop better bone defect repair materials.

Tsinghua University Biomaterials Research Group had long been focusing on the hierarchical self-assembly of nano-fibrils in mineralized collagen. Their research was supported by IUMRS and was encouraged by the 2003 Sômiya Award for International Collaborative Research from IUMRS (Picture 1). After a long period of hard work, they made a breakthrough in 2003. In the paper published in *Chemistry of Materials*, they described their study of nano-fibrils of mineralized collagen with the help of conventional and high-resolution transmission electron spectroscopy and revealed the three stages in which the hierarchical self-assembly occurs.

The achievement was extensively reported and highly remarked by top international academic journals and websites. *Nature Materials* reported the discovery and stated that it gives “the first direct evidence” to the theory that “nanocrystals of the minerals were deposited along the surface of the fibrils”. It pointed out that “these results should improve the understanding of collagen-mediated mineralization in other calcified tissues, and point the way to new functional materials for biomimetic engineering” (Picture 2). The Website of the American Chemical Society highlighted the discovery, too (Picture 3).

The discovery of the hierarchical self-assembly mechanism paved the way for the development of biomimetic mineralized collagen bone grafts. Tsinghua University Biomaterials Research Group identified the appropriate conditions for the self-assembly of mineralized collagen fibers in human bones—that is, the right pH, temperature, and ion concentration for the self-assembly—and successfully synthesized mineralized collagen which is the first case of biomimetic mineralization resulting in synthetic material with ingredients and microstructure identical to those of natural bones.

In recognition of his outstanding contribution to the field of medical and biological engineering, American Institute for Medical and Biological Engineering elected the key member of the research group, Professor Fuzhai Cui, a fellow in 2007 (Picture 4). In recognition of his significant achievements in the development of bone defect repair materials, International Union of Societies for Biomaterials Science and Engineering elected Professor Fuzhai Cui a fellow in 2008 (Picture 5). Domestically, Professor Cui was awarded the Second National Prize for Technological Invention in 2008 and was awarded the Second National Prize for Natural Science in 2011 (with the Academician of Chinese Academy of Engineering Hengde Li as co-winner) (Pictures 6 and 7).

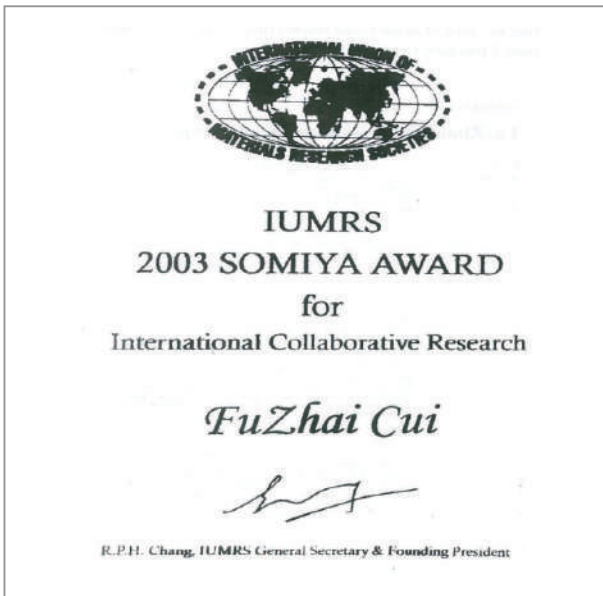
In order to ensure the safety and effectiveness of biomimetic mineralized collagen bone grafts in clinical application, numerous *in vitro* and animal experiments have been done in different labs. *In vitro* experiments demonstrate that biomimetic mineralized collagen has no stimulatory effect and produces no sensitization reaction. It is neither acutely nor chronically toxic. Nor is it genetically toxic.

Animal experiments have been done with rabbits, rats, sheep, pigs, and dogs to verify the effectiveness of biomimetic mineralized collagen bone grafts in bone defect repair, spinal fusion, and canine extraction site preservation. They demonstrate that biomimetic mineralized collagen bone grafts are characterized by high biocompatibility, excellent biodegradability, and good osteoconductivity.

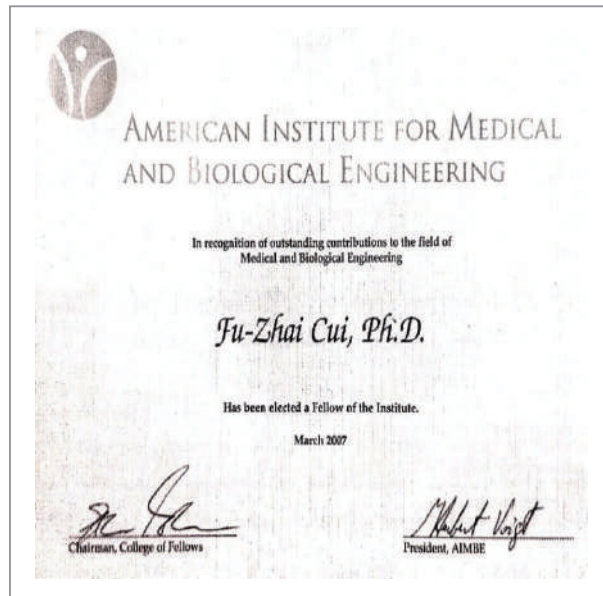
In 2014, biomimetic mineralized collagen bone grafts was approved by the China Food and Drug Administration (CFDA); in 2015, it was approved by the U.S Food and Drug Administration (U. S. FDA). After its approval by FDA and CFDA, biomimetic mineralized collagen bone grafts have been used in successful treatments of more than 1.5 million patients worldwide. They have made significant contribution to the improvement of people’s health and well-being.



International Union of  
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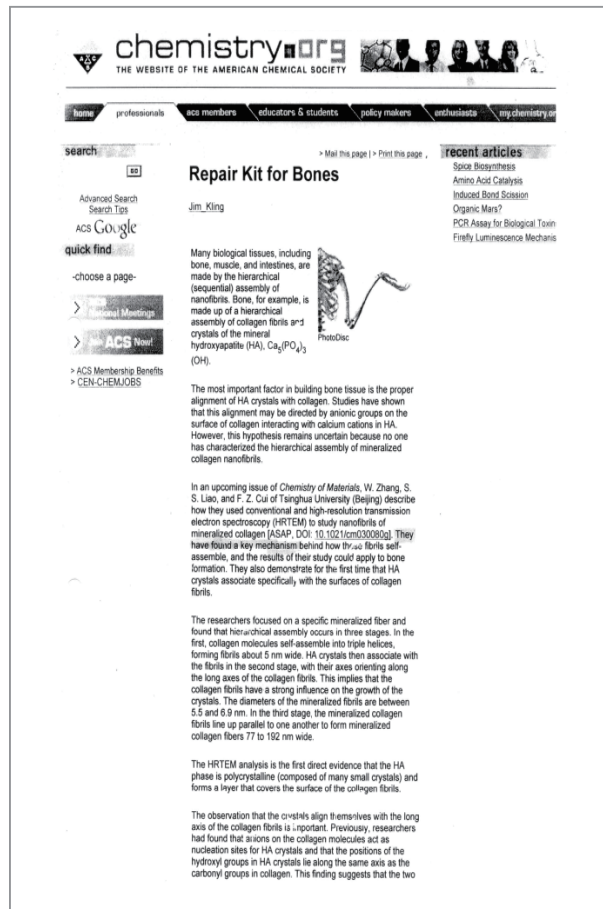
Picture 1



Picture 2



Picture 3



Picture 4

© Fuzhai Cui, Professor, Tsinghua University, Materials Science & Engineering, China.  
<https://fellowsbse.org/current-fellows/fu-zhai-cui/>

### 6.4.3 The 2012 Sômiya Award winners (Prof. John A. Kilner, Imperial College London, UK)



Prof. John A. Kilner

In the autumn of 2012, it was my great honour to be the leader of a team awarded the IUMRS Sômiya Award for the collaborative work we were pursuing into the “Design of ionic and mixed conducting ceramics for fuel cell applications”. The award was made at the IUMRS Conference in Yokohama, Japan in September 2012. The international team (Figure 1) consisted of Imperial College London, the International Institute for Carbon Neutral Energy Research (I<sup>2</sup>CNER) in Kyushu, Massachusetts Institute of Technology (MIT) and the Catalan Institute of Nanoscience and Nanotechnology (ICN2).



The 2012 Sômiya Award team. From L to R: Prof Santiso, ICN2. Prof John Kilner Imperial College, London, Professor Harry Tuller, MIT, Professor Tatsumi Ishihara, I<sup>2</sup>CNER, Prof Bilge Yidiz, MIT

The Sômiya Award proved to be a great help in furthering the collaboration between the members of the team. We have continued this close collaboration, and this has resulted in two of the Sômiya Award partners, Imperial and I<sup>2</sup>CNER being awarded the Daiwa Adrian Prize for UK/Japanese collaborative research work in 2016 (<http://dajf.org.uk/grants-awards-prizes/daiwa-adrian-prizes>). Following these successes, the same two members of the original team Imperial, and I<sup>2</sup>CNER, applied for a JSPS Core to Core award to work on Solid Oxide Interfaces for Faster Ion Transport (SOIFIT, <http://www.soifit.net/en/>) for the optimisation of solid state ionic devices such as batteries and fuel cells with MIT as an associated partner. This major collaborative grant was awarded in 2017. We are very grateful to the IUMRS for the opportunity the Sômiya award has given us to give a global reach to our research into the fundamental aspects of materials for application in clean low carbon energy conversion and storage.

#### *J.A Kilner*

- © John A. Kilner, Faculty of Engineering, Department of Materials, Professor, BCH Steele Chair in Energy Materials, Department of Materials, Imperial College, UK.  
<http://www.imperial.ac.uk/people/j.kilner>



#### 6.4.4 The 2015 Sômiya Award winners (Professor Ruslan Z. Valiev, Ufa State Aviation Technical University, Russia) and Professor Yuntian T. Zhu, North Carolina State University, USA)



Prof. Ruslan Z. Valiev,  
Mississippi State Uni-  
versity, USA



Prof. Yuntian Zhu  
North Carolina  
State University,  
USA

The 2015 Sômiya Award was presented to an international collaboration team consisting of Ruslan Z. Valiev (Russia) and Yuntian T. Zhu (USA) for “Resolving the Paradox of Superior Strength and Ductility of Ultrafine-grained Metals through Microstructural Design” (see Fig. 1) during the awards ceremony at the International Union of Materials Research Societies, International Conference on Advanced Materials

(IUMRS-ICAM 2015) held on October 25-29 in Jeju, Korea (Fig. 2).

The ceremony of the 2015 Sômiya Award prompted the members of the International NanoSPD Steering Committee to organize and host the symposium “SPD: Innovative Processes for High-performance Structural and Functional Materials” at the IUMRS-ICAM 2017 held in Kyoto,

Japan on August 27 – September 01, 2017 with Prof. Zenji Horita of Kyushu University serving as the primary organizer and chairman of the event. This symposium provided a forum to exchange information and ideas related to a wide range of relevant topics: process development, simulation and modeling, enhancement of mechanical and physical properties as well as practical application of the SPD processes.

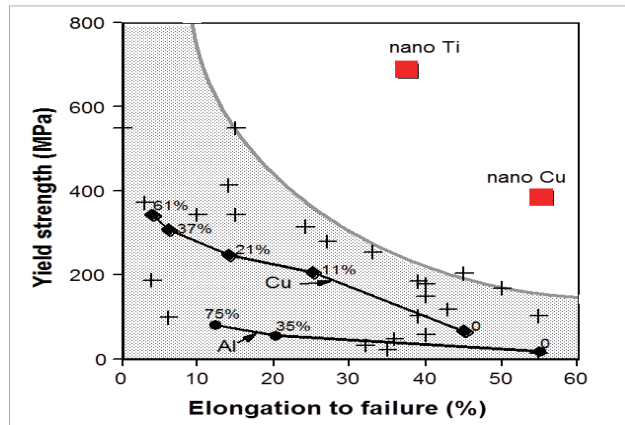


Fig. 1 The extraordinary combination of both high strength and high ductility in nanostructured Cu and Ti processed by SPD clearly sets them apart from coarse-grained metals (marked as +), including Au, Be, Ca, Co, Fe, Hf, Mg, Mo, Nb, Ni, Pd, Pt, Re, Ru, Ta, Th, Ti, U, V, W [for more details, please, refer to R.Z. Valiev, Y.T. Zhu, Transactions of the Materials Research Society of Japan, vol. 40 (4) (2015), pp. 309-318]



Fig. 2. The photo shows Ruslan Valiev receiving the awards, presented by General Secretary of IUMRS, Prof. Robert P.H. Chang (center) and the Conference Chair, Prof. Soo Wahn Lee (right).

**Professor, Director Ruslan Z. Valiev**

- Ruslan Z. Valiev, Professor, Director, Institute of Physics of Advanced Materials, Ufa State Aviation Technical University, Russia.  
<http://www.ipam.ugatu.ac.ru/people/valiev.html>
- Yuntian T. Zhu, Distinguished Professor of Materials Science & Engineering, North Carolina State University, USA; Editor-in-Chief: Materials Research Letters. <https://www.mse.ncsu.edu/people/ytzhu/>

**6.4.5 The 2017 Sômiya Award winners(Prof.Chennupati Jagadish, Australian National University, Australia)**

Prof. Chennupati  
Jagadish

It was a great honour to be awarded the 2017 Sômiya Prize for leading an international collaboration on “*Semiconductor Nanowires: Growth, Characterization, Processing and Optoelectronic Devices*”. The collaboration comprised Prof. Leigh M. Smith at the University of Cincinnati (USA), Prof. Michael B. Johnston at the Oxford University (UK), Prof. Jin Zou at the University of Queensland (Australia) and Prof. Antonio Polimeni at Sapienza Università di Roma (Italy). The collaborative effort was aimed at understanding the fundamental properties of nanowires (semiconductor nanostructures with a filamentary shape) and their exploitation in practical optoelectronic devices, such as lasers, detectors and sensors.

The cross-fertilization between Materials Science, Chemistry, Solid State Physics and Device Engineering was pivotal to the success of the collaboration.

We are grateful to IUMRS for awarding this partnership that is still continuing with success and has permitted to establish new collaborations on diverse topics.

The ceremony of the 2017 IUMRS Sômiya Award was held in Kyoto on August 30 during the 15th International Conference on Advanced Materials organized by the Japan Materials Research Society.

*Professor Chennupati Jagadish*

*Department of Electronic Materials Engineering, Research School of Physics  
Australian National University, Canberra, Australia*



Prof. Jim Williams (IUMRS) presenting 2017 IUMRS Sômiya Award to Prof. Chennupati Jagadish



From left: Prof. Toshi Mori (NIMS, Japan), Prof. C. Jagadish (Australian National University), Prof. A. Polimeni (Sapienza, Università di Roma), Prof. H. J. Joyce (Oxford University) and Prof. Jim Williams (Australian National University).

Web link: <http://www.iumrs-icam2017.org/award/somiya.html>



### 6.4.6 The 2019 Sômiya Award Winners (Prof. Liming Dai, Case Western Reserve University, USA)



Prof. Liming Dai,  
CWRU, USA

Prof. Liming Dai, Case Western Reserve University (CWRU, USA), Prof. Jian-Feng Chen, Beijing University of Chemical Technology (BUCT, China), and Prof. Zhenhai Xia, University of North Texas (UNT, USA) were the recipients of The 2019 International Union of Materials Research Society's (IUMRS) Sômiya Award for their collaborative work on "Carbon Nanomaterials as Metal-Free Catalysts for Renewable Energy Generation and Storage". The award was made at the 2019 IUMRS-ICAM Conference in Nice, France, on May 29, 2019.

We appreciate IUMRS for recognizing our pioneering work and the importance of the field of metal-free carbon electrocatalysts. The Sômiya Award proved to be very helpful for further enhancing the international collaboration between our team members and for facilitating the rapid development of this emerging field. Our trans-Pacific international collaboration has since evolved into intercontinental collaboration cross three continents as the team leader, Professor Liming Dai, has recently moved to University of New South Wales in Sydney to take up an Australian Laureate Fellowship (<https://www.arc.gov.au/grants/discovery-program/australian-laureate-fellowships>). We are grateful to IUMRS and look forward to continued support from IUMRS!



Photo 1 The photo shows Liming Dai and Zhenhai Xia receiving the awards, presented by General Secretary of IUMRS, Prof. Robert P. H. Chang and the IUMRS President, Prof. Yafang Han (Award recipient Jian-Feng Chen is not in the picture)

From right: 1. Yafang Han, 2. Zhenhai Xia, 3. Liming Dai, 4. Robert P.P. H. Chang



Photo 2 This photo was taken with IUMRS' EC and GA members immediately after the award ceremony.

From right: 1. Toishyuki Mori, 2. Ziqiang Dong, 3. Lianzhou Wang, 4. Yafang Han, 5. Liming Dai, 6. Rodrigo Martins, 7. Zhenhai Xia, 8. Zhong Lin Wang, 9. Ying Wu, 10. Yuan Ping Feng