

QUARTERLY NEWSLETTER

GREETINGS FROM OUR NEW PRESIDENT

Hello ISMET community! I am so excited to begin my tenure as President of ISMET and continue to grow our international community of researchers. Returning from the excitement of the ISMET6 meeting in Lisbon, I can see that our organization has matured to include a diverse research portfolio of both basic and applied science. ISMET6 featured talks on the fundamentals of microbial extracellular electron transfer (EET) in model organisms, such as *Shewanella* and *Geobacter*, to extraordinary stories of how microbial fuel cell technologies have matured into full-scale demonstrations and industry partnerships to clean wastewater and assist in microbial and electrochemical production of drop-in fuels. I want to again thank the organizers, Ricardo Louro, Catarina Paquete, and Carlos Salgueiro, as well as the rest of the local organizing committee. The meeting attracted researchers from all over the world, achieved a gender balance in speakers and approached a gender balance in attendees. I look forward to the 2018 regional meetings in Minnesota, Newcastle, and Goa.

As ISMET enters its 7th year, we should reflect on what we've learned about microbial electrochemical technologies since some of the very first modern microbial fuel cell papers were published nearly 20 years ago. We've seen incredible improvements in MFC design, have a much better understanding of application space for MFC, and have gained insight into the fundamental mechanisms of microbial EET. I think our community can achieve an even deeper understanding of the microbiology and physiological processes that constrain our systems through advances in next generation DNA sequencing. It has become almost standard practice in our field to enrich for electrogenic or electrotrophic microbial communities using inoculum derived from the environment of interest and to sequence the 16S rRNA gene of those communities to shed light on the microbial diversity. However, we are missing a vast amount of information by leaving the genomes unsequenced. With the ever-decreasing cost of metagenomic sequencing and the vast number of resources available now for genome assembly and annotation, I think it is within reach for our community to sequence 100 new genomes from bioelectrochemical systems in the next two years. In fact, we have a responsibility to do this since we are the only researchers in the world that generate these types of enrichments. The key to the functional components of EET is in your microbial communities and BES cultivation offers a unique platform to study these processes in a controlled bioreactor. So please join me in the ElectricMicrobe100 project! More details soon!



Sarah Glaven

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Taeho Lee



Taeho Lee is a professor in the Department of Environmental Engineering at Pusan National University, Korea. He was chairperson and hosted the 3rd AP-ISMET in Busan in 2016. He found it to be a wonderful experience and so is happy to serve as a member of the Asia-Pacific Region ISMET board in return for the appreciation of ISMET members who supported and attended AP-ISMET 2016.

Lee has participated in all meetings of ISMET and AP-ISMET. He served at the 2015 ISMET5 Science Committee in Arizona and at the 2014 2nd AP-ISMET in Singapore. In 2009 Lee attended as an invited speaker at the ISMET2 and the AP-ISMET meetings. He is currently the chairperson of the MET specialist group in the Korea Society of Environmental Engineers. He organized the national symposium of the Korean MET Researchers for 2014, 2016 and 2017.

For the past decade, Lee has been interested in developing a new wastewater treatment process based on MET. His findings show that MET-based wastewater treatment plants are capable of producing high quality effluent wastewater that meets discharge limits. He strongly believes MET will be a cost-effective technology used for decentralized sewage treatment. Lee would like to contribute to increasing the number of ISMET members and connecting MET researchers to promote active collaboration in the Asia-Pacific region.

Deepak Pant



Dr. Deepak Pant is a Senior Scientist at the Flemish Institute for Technological Research (VITO), Belgium. His research focuses on bioenergy, specifically, the design and optimization of bio-electrochemical systems for energy recovery from wastewater and microbial electrosynthesis for production of value-added chemicals through electrochemically driven bio-processes. His main contribution in the BES research focused on development of activated carbon-based gas diffusion electrodes as air cathodes for oxygen reduction. He has been involved in the activities of ISMET community for a long time and manages the twitter handle of ISMET society. He has 1 book (published by Springer), 1 Patent, 79 peer-reviewed publications with >4570 citations (h-index 36) and 22 book chapters to his credit. He is a member of several scientific communities including ISMET, ISE, BES, BRSI, IFIBiop and AMI. He serves as Editorial board member for the Journals: 'Bioresource Technology', 'Electronic Journal of Biotechnology', 'Biofuel Research Journal', 'Heliyon' and 'Frontiers in Environmental Science'.

Recently he started as the Editor for the new Elsevier Journal "Bioresource Technology Reports". He served on the scientific committee for 5th MFC conference (ISMET 5, Arizona, 2015) and EU-ISEMT 2016 (Rome). He also organized a symposium on "Electrochemistry, Photo-Electrochemistry and Bioelectrochemistry of Artificial Photosynthesis" at the annual meeting of International Society for Electrochemistry (ISE) in 2016, The Hague, Netherlands. He collaborates with researchers all over the globe and count over 115 co-authors spread across 30 institutions/universities. Currently, he is supervising one PhD student on microbial electro-synthesis and previously supervised 2 PhD students on microbial fuel cells. He was a promoter for two Marie Curie Post-docs on Microbial and Enzymatic Electro-synthesis on conversion of CO₂ to value-added chemicals. He also contributes to scientific reviewing activities and reviews proposals for European Commission (Horizon 2020) and national funding programs of Spain, Italy, Poland, Croatia, Germany and India. He is also a member of the EPSRC expert college (UK).

More information:

https://www.researchgate.net/profile/Deepak_Pant2

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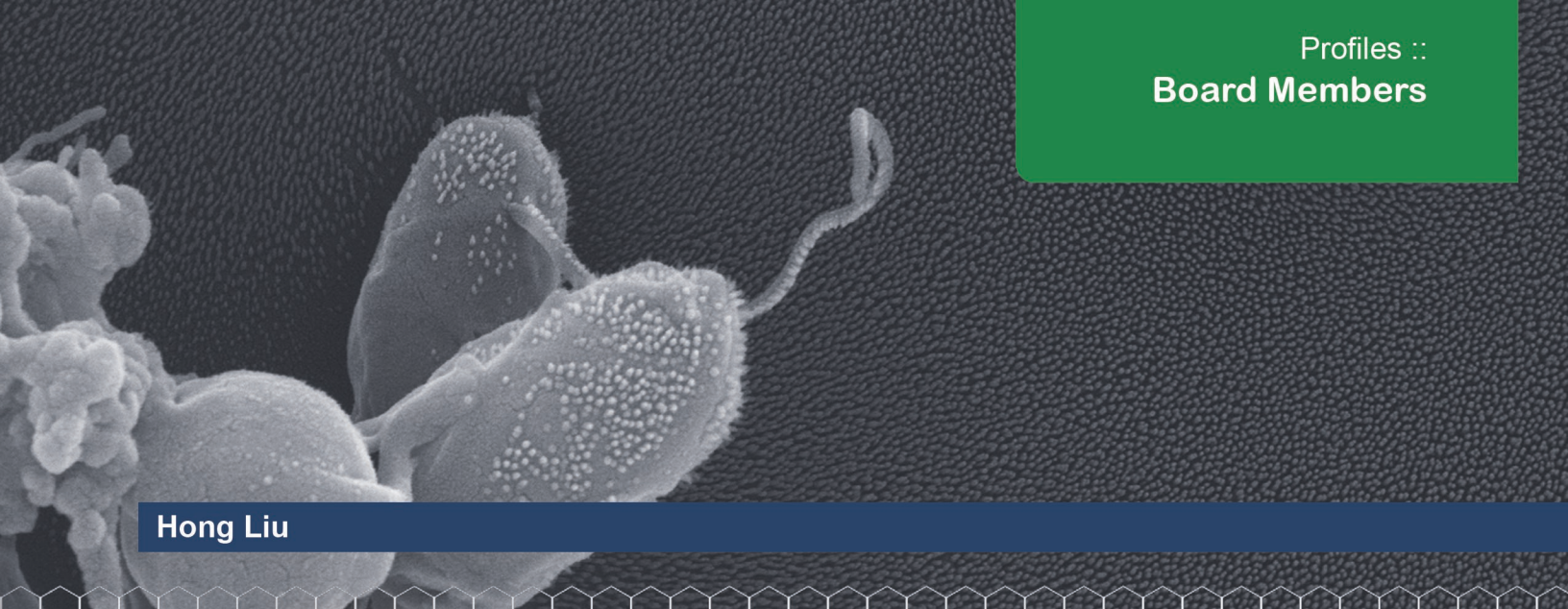
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Hong Liu



Hong Liu is a Professor of Biological and Ecological Engineering (BEE) at Oregon State University (OSU). Her main research efforts are in developing microbial electrochemical systems for bioenergy production and for wastewater treatment. She is an author and co-author of seven book chapters and more than 60 peer reviewed journal publications with over 8000 citations and an H-index of 35. Liu was named as a Highly Cited Researcher and listed along with 3000 researchers worldwide in The World's Most Influential Scientific Minds, Thompson Reuters, 2014, 2015, 2016. Liu is a recipient of a NSF CAREER award for 2010. She has delivered over 30 invited talks around the globe and has served on eight organizing and scientific committees for international or regional conferences. Liu has reviewed hundreds of manuscripts and proposals and served on the Editorial Boards of two international journals.

Antonella Marone



Dr Antonella Marone is joining (starting date October 2nd) GENOCOV research group at the Department of Chemical, Environmental and Biological Engineering of Universitat Autònoma de Barcelona (UAB), this fall after spending more than three years at Laboratory of Environmental Biotechnology (LBE) of INRA (France).

At LBE Antonella worked with Nicolas Bernet and Eric Trably, she has been PI of the project "Waste2bioHy", an EU Marie Curie Grant (MC-IEF-326974), focused on combining fermentation + microbial electrolysis in a cascade two-step bioprocess for a complete exploitation of organic waste streams.

At GENOCOV, she will work with Juan Baeza Labat and Albert Guisasola as PI of the project BioERA - BioElectrolysis for the Refinery of Agro-industrial wastewater – (Beatriu de Pinos post-doctoral grant). Antonella will continue to work with anodic oxidising microbial community in microbial electrolysis cells but she will also focus on the use of a cathodic biofilm to study the possibility of decreasing the cathodic overpotential.

Sunil A. Patil



Dr. Sunil A. Patil joined the Department of Earth and Environmental Sciences at Indian Institute of Science Education and Research Mohali in August 2017. Before joining IISER Mohali, he was a senior Humboldt research fellow in the group of Prof. Uwe Schröder at IÖNC, Technische Universität Braunschweig, Germany. Earlier, he has worked with Prof. Lo Gorton at Lund University, Sweden and Prof. Korneel Rabaey at CMET in Ghent University, Belgium. He has been a recipient of DAAD scholarship (2008-2010), Marie Skłodowska-Curie fellowship (2013-2015) and the Humboldt fellowship for experienced researchers (2016-2017). At IISER he will continue working on microbial and electrochemical technologies for CO₂ conversion to chemicals, resource recovery from wastewaters and bioremediation of micropollutants.

Miriam Rosenbaum



As of October 2017, Dr. Miriam Rosenbaum has joined the Leibniz Hans-Knöll-Institute – HKI – as a Department leader and the Friedrich-Schiller-University in Jena, Germany, as a Full Professor in Synthetic Biotechnology. She spent the past six years as a Junior Professor at the Institute of Applied Microbiology at RWTH Aachen University. Before, she worked as a Research Associate in the lab of Lars Angenent at Cornell University, Ithaca, NY and Washington University, St. Louis, MO. Miriam obtained a PhD in Environmental and Analytical Chemistry and a Diploma from the University of Greifswald, Germany. Miriam will continue with her research on the microbial physiology of mediated electron transfer and molecular engineering of electroactive biocatalysts. As head of the HKI-Bio Pilot Plant, she will also expand her activities to the integration of bioprocess technology with electrochemistry from the microliter to the liter scale.

Dear ISMET members and colleagues interested in the development of Microbial Electrochemistry and Technology,

Now that ISMET6 has finished it is with a sense of mission accomplished that the whole organizing team is starting to relax. ISMET6 had 247 participants from all parts of the world. It revealed that the theme is clearly of global interest with participants from the three traditional ISMET regions and also from Africa and South America. The ISMET6 program was largely defined by the abstracts submitted. The selection of the talks was made with the generous contribution of the members of the scientific committee that read more than 200 abstracts and helped us to define a program that reflected the research being performed by our community. If you were among the participants you had the opportunity to experience the current state of our field and the directions in which it is evolving.

A vibrant community is characterized by new practitioners entering the field. This was very clear at ISMET6 where nearly half of the participants were students and post-docs. We strived to stimulate their participation by awarding 46 of the 75 speaking slots to them. All of this bodes well for the future. And the future is already in the making. A very lively session during the closing dinner selected OIST in Japan to host the ISMET7 in 2019. As we close down our event we leave you with this photo that provides a clear demonstration of the strength of ISMET, and brings back memories of a great time spent in Lisbon.

Carlos, Catarina and Ricardo



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