

ISMET news

Quarterly newsletter

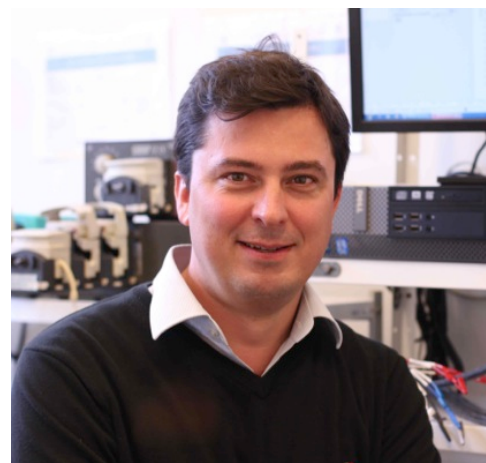
No. 4 – Apr 2014

Re-setting our published work

More depth on the existing processes allows a better understanding of the microbial and ecological functioning

Dear ISMET member,

I hope 2014 has started well for you. It definitely shapes up as a year with much action including three conferences (see announcements), the election of new board members and the ISMET awards. In the last **ISMET news** I commented on the considerable growth of our field both in terms of funding and published outcomes. Thinking further on this points to the major scientific challenge: the transition from an emerging field to a mature field, in any way. This does not only relate to delivering “impact” (the administrator’s favourite), it also requires a re-setting of expectations of our published work. In the past years publications have added many new processes to the list of applications and we cannot expect that constantly new processes surface. We also cannot reasonably expect the discovery of multiple new electron transfer mechanisms. Instead, existing processes need to be better understood and developed towards application and we need to dig deeper into the mechanisms of electron transfer. More depth on the existing processes allows a better understanding of the microbial and ecological functioning, with clear outflows towards understanding our natural environment. This change in scope of manuscripts needs to be picked up by reviewers and editors assessing the value of the work. It also needs to be picked up by you when writing articles.



A second important aspect directly relating to this maturation is the creation of globally accepted protocols and parameter expressions. The interdisciplinary nature of our work needs a Rosetta’s stone to allow translation of results across the disciplines and more importantly acceptance/assessment of the quality of data provided. This should be done without restricting the important diversity that goes with scientific research. Via the ISMET website we hope to contribute to this, by publishing methods and protocols as well as working out minimal parameter requirements. I hope that this transition of our field can accelerate in the coming year, because it is high time.

Sincerely,



Korneel Rabaey
President

Miriam Rosenbaum, Chair of the website Committee

When she started working on BES in 2003, the mere idea of generating electricity with microorganisms sounded incredible. Nowadays she leads her own group at the RTWH Aachen, Germany. Chairing website Committee, she is aimed to boost the ISMET website for engaging members.

Which is the most exciting part of your research?

Working in such a diverse field of science, where I enjoy many fascinating discussions with people from various scientific backgrounds who always provide very different – sometimes-surprising – insights into the fundamentals or the applied aspects of BES.

Why did you decide to get involved into the ISMET?

For me good research lives of lively discussions among scientists and I think especially in our interdisciplinary field it was important to join together to utilize synergisms in our work and expertise. ISMET provides an excellent umbrella to tie BES researchers together. But ISMET is also aiming to become more than a formal society. Regular meetings and strengthening the membership platform on the webpage foster active researcher exchange and communication.

What are your tasks as Chair of the website committee?

Since I received this mission from Korneel Rabaey in September 2013, we have revisited webpage functions and content and we hope to provide a more useful resource platform to ISMET members. Thus, I am mainly providing directions and guidelines, while the actual webpage administrator is Tim Lacoere from Ghent University, whom I would like to thank at this point very much for his excellent work! I am assisted by my fellow webpage committee members Tatiana Rodrigues (Aachen University, Microbiology Corner), Falk Harnisch (Environmental Research Center Leipzig, Electrochemistry Corner) and Craig Werner (Kaust University, Technology Corner) in setting up the ISMET corners – Microbiology, Electrochemistry and Technology, which we envision to become lively exchange platforms for protocols, expert opinions, papers, etc. All publications were recently linked to one or several sub-categories to allow more directed access to specific research topics. As user contents in these corners grow, we likely will need more structures to allow easy access to specific contents. The webpage committee is also reviewing new uploads for duplications or inappropriate content.

What are some of the strengths of the ISMET?

It is still a very young society in a fast growing field of research. This makes it flexible and still very close to the researcher community. Our society is providing many possibilities to actively engage in the community and benefit from fellow members. And you can just meet fantastic people in this community!

Which are the benefits of membership?

Becoming an ISMET member has many benefits for researchers working on BES topics or for companies or stakeholders

interested in this field. First of all, only ISMET members have full access to the webpage, which contains a members database with contact data and research profile overviews;



a growing publication database; access to the corners, which will develop into active information exchange platforms. Second, an ISMET member receives early information and discounts for upcoming community meetings and conferences and ISMET keeps you up to date on important developments with its quarterly newsletter. Very important is also that all ISMET members are eligible to vote for the ISMET board but also to be nominated to become an ISMET board member themselves. Thus, if you want to engage in this community – becoming an ISMET member is a MUST.

How can ISMET members contribute to boost the society?

It starts simply by keeping your ISMET profile on the webpage up to day and entering your newest publications. But you can also get more actively engaged in any of the committees by expressing interest to the respective committee chair. Local and international meetings are also a good place to engage with the society.

What is your vision for the ISMET over the next 5 years?

I envision ISMET to really become a central axis of the BES research community, but also to set impulses out to the community. One of the most important tools for achieving this goal is the ISMET webpage – so we hope that all of you participate actively and provide us with feedback on what can still be improved or added.

Value from urine: from lab to application

Recent research and pilot-development is leading to application of an urine-MFC at building of the Dutch Ministry of Infrastructure and Environment

Fertilizers are needed to ensure sufficient food production. Most societies are currently relying on phosphorous ore imports and energy intensive production of ammonia to produce necessary fertilizers. Urine is an interesting source for the production of fertilizers and is nowadays contributing up to 80% of the nitrogen load and 50% of the phosphorous load during domestic wastewater treatment. The EU ValuefromUrine project (www.valuefromurine.eu) accepted the challenge to investigate the recovery of phosphorus and nitrogen from urine in a way that requires a limited investment of energy. This way societies will become less depending on unsustainable sources. From 2012 onwards 7 partners from 5 countries are collaborating within this project.

Recently a novel nutrient recovering bioelectrochemical technology was piloted in Leeuwarden. Founded by these results the Dutch Minister Schultz van Haegen announced that the Ministry of Infrastructure and Environment will apply this new purification technology with a capacity for 450 persons in 2015. This will be one of the first achievements on scaling-up a bioelectrochemical system to the commercial level. The to be installed full-scale bioelectrochemical systems is under development by DesaH and Magneto Bio Electro Chemtech, both spin-off companies of Wetsus. Magneto takes the role as key-component supplier through design and supply of the bioelectrochemical cell. The role of DesaH is being supplier of knowledge and materials for the removal of phosphorous by struvite precipitation and the integration of the total system.

More info at <http://www.valuefromurine.eu/> and www.wetusus.nl

Dr. David Strik

Wageningen University

ValuefromUrine



In their own words

People involved in this EU Project on their personal experience.

Mariana Rodríguez Arredondo, PhD student at Wageningen University & Wetsus

“What I like the most about my PhD project is the opportunity to work with a technology that is able to turn 'waste' into something valuable. The idea of recovering energy and nutrients from urine is very interesting to me. Also, I enjoy being part of a collaborative project, in which I can learn further from other companies and research institutions.”

Dr. Philipp Kuntke, Postdoc at Wetsus

“The biggest challenges are the translation of small scale laboratory results and designs into a larger scale more complex system, which is operated at an end-user office building. This implies necessary further development in the design of the BES/MET system, the integration with already existing infrastructure and processes, such as the struvite recovery process. On the other hand, also the installation of a robust urine collection (water free urinal including the connection to the pilot system) into the existing infrastructure of an already existing building and to ensure its frequent use can be a challenge.”

Dr. Martijn Bijmans, Project coordinator at Wetsus

“I hope this project will demonstrate the feasibility of resource recovery in urban environment and opens the discussion that with a new infrastructure we can live much more sustainable both environmentally as economically in the long term. Ammonium recovery with BES seems a very interesting and feasible business case which has potential to be commercially sustainable in the next years.”

Registration is open for regional meetings

The ISMET Local committees are fully occupied with the organization of the different regional meetings throughout the year. Registration is now open.

- 2nd NA-ISMET: May 13-15, 2014 at PennState University, University Park, USA. Abstract submissions are no longer being accepted. Further details at www.engr.psu.edu/naismet2014
- 2nd AP-ISMET: July 21-24, 2014, Singapore. Abstract submission is now closed.
- 2nd EU-ISMET: September 3-5, 2014 in Alcalá, Spain. Call for abstracts is open. More info at www.eu-ismet2014.org

The *Electroactive-biofilm workshop* will be organized at University of Alcalá on 3rd September. Attendance will be limited to 30 people with a registration fee of 150 EUR. EU-ISMET is fully committed to maximizing the number of students at the conference so registration for ISMET members includes two nights accommodation.

If you are not already an ISMET member, please consider joining us at www.is-met.org.

Job opportunities

PostDoc/PhD position at the University of Freiburg, Germany

A PostDoc/PhD position in the field of Microbial Electrolysis Cells is available. Starting from May 2014, the Department of Microsystems Engineering at the University of Freiburg (Germany) opens a new PostDoc or PhD position. In close collaboration with project partners from chemistry, microbiology and industry you will be responsible for the design, construction and characterization of a microbial electrolysis cells operating on high-strength industrial waste water. For further inquiries and applications please contact: Dr. Sven Kerzenmacher, telephone: +49-761-203-73218, e-mail: kerzenma@imtek.de

Postdoctoral research fellow position at SCELSE, Singapore

One Postdoctoral Researcher position in Molecular Microbiology is available immediately (starting date April 2014) at Singapore centre on Environmental Life Sciences Engineering (SCELSE), Nanyang technological University (NTU), Singapore. The applicants should have good knowledge of microbial ecology, aerobic and facultative mutant preparation. Experience in electrochemistry is a plus. The

postdoctoral positions are funded for two years, and a competitive salary is available for qualified candidates.

SCELSE is a unique interdisciplinary Research Centre of Excellence (RCE), funded by National Research Foundation, Singapore Ministry of Education, Nanyang Technological University (NTU) and National University of Singapore (NUS). Hosted by the NTU in partnership with NUS, SCELSE is linking new insights from the life sciences with expertise from the emerging technologies in engineering and natural sciences to understand, harness and control microbial biofilm communities. The union of these fields has established a new discipline of Environmental Life Sciences Engineering (ELSE).

Singapore is a large metropolitan city with an affordable cost of living and all the amenities and cultural opportunities of a larger city.

Interested candidates should send their CV and the names and addresses of three references to Dr. Enrico Marsili at SCELSE emarsili@ntu.edu.sg

Skype interviews will be arranged in the next few days. For more information, contact Dr Enrico Marsili at emarsili@ntu.edu.sg

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