

EFB Bioengineering & Bioprocessing Section



EUROPEAN FEDERATION OF BIOTECHNOLOGY

Newsletter 2015 – Issue 4

Dear EBBS Member,

Mark your calendars! The 3rd Applied Synthetic Biology in Europe Meeting ([ASBE2016](#)) is taking place next February 22-24 in Lisbon! Registration and abstract submission is now open! We are very much looking forward to this meeting which is co-organised with the EFB Microbial Physiology section. Abstract and registration information is below!

In this issue you will also find an interview with Dr. Heleen De Wever from Vito, Belgium in our "Introducing EBBS Board Members" series.

Further, ERA-IB has just launched the [7th transnational joint call](#) for multilateral research projects using industrial biotechnology! If you are looking for partners we would be happy to facilitate pairing!

Additionally, Louise and Tim are on the scientific committee for the 17th European Congress of Biotechnology 2016 ([@ECB2016](#)), to be held next summer in Krakow, Poland, for which registration is now open (more info here: [www.ecb2016.com](#)).

We would like to thank our members who are actively in contact with us through our various news channels ([Twitter](#), [LinkedIn](#) and [Facebook](#)). Please, connect with us using these media for news on funding opportunities and conferences and the latest developments in European Biotechnology; thereby aiding the visibility of the section to help expand our network.

We are still looking for members to take a leading role in section activities and to be our industrial coordinator! So please email us if you want to get involved!

If you would like to share news, job opportunities and stories in our next newsletter, please contact Louise, Tim or myself!

As this this year is coming to end, we are wishing our section members a relaxing and fruitful holiday and a fantastic start to the new year and we hope to see many section members at the ASBE2016!

Beatrice V Vetter, December 2015

Upcoming Section Meeting: 3rd Applied Synthetic Biology in Europe (ASBE2016)

3RD APPLIED SYNTHETIC BIOLOGY IN EUROPE
22-24 FEBRUARY 2016
Costa da Caparica, Lisbon - Portugal

SUBMIT NOW!
Deadline For Oral and Presentation:
12th January 2016

We would like to welcome you to the third meeting in the Applied Synthetic Biology in Europe series. Following the first (Barcelona, 2012) and second (Malaga, 2013) meetings in the series, we will explore the wealth of applied synthetic biology research, covering diverse product and application areas and utilising biological systems from bacteria through yeast to plants and mammalian cells. Emphasis will again be on the commonalities and links between different approaches

and the application of synthetic biology tools and techniques for industrial implementation. This will enable networking with a wide variety of researchers at all levels from academia and industry, from students to professors and group leaders, consistent with the multidisciplinary nature of EFB.

This will be a joint meeting between the EFB Bioengineering & Bioprocessing Section (EBBS) and the Microbial Physiology Section. There will be opportunity to join these sections and help organise future meetings.

There are also a limited number of meeting grants available to help students and young scientists whose abstracts will be presented as oral or poster presentation to offset the cost of attending the congress.

We are looking forward to a few days of exciting discussion and excellent science!

For more information visit our website:

<http://tinyurl.com/asbe2016>



[@ASBE2016](#)
[#ASBE2016](#)



Section Co-chairs:



Dr. Louise Horsfall
[@lehorsfall](#)



Dr. Tim Overton
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Follow us:



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[www.efb-ebbs.eu](#)

Contributing Authors:



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(Vito, Belgium)



Prof. Jens Schrader
(DEHEMA, Germany)





Introducing EBBS Board Members:

Dr Heleen De Wever

VITO (Belgium), @VITObelgium

<https://vito.be/en/chemistry/efficient-reactions/biological-conversions-biomass-and-gas>



Can you tell us about your background? And where are you based now? Since 1991, I am an Engineer in Chemistry and Agricultural Sciences, with a specialization in Industrial Microbiology. In 1995, I obtained a PhD degree at the Catholic University of Leuven on the topic of 'Biodegradation and toxicity of benzothiazoles'. Afterwards, I had the opportunity to perform postdoctoral research in Germany, the USA and Belgium, on microbial processes related to wastewater and groundwater treatment, as well as greenhouse gas emissions. Since 2001, I am project manager at VITO, the Flemish Research Institute for Technological Research. Since a couple of years, I have been leading the Biotechnology team in VITO's Business Unit of Separation and Conversion Technology. While my research activities originally focussed on bioprocesses for environmental applications, they have now shifted to bioprocesses for sustainable chemistry.

What is your area of expertise? My main research interests are the optimization of fermentation or biocatalytic processes through

integration with separation technology, and the application of bioprocesses for the valorisation of different types of feedstocks, varying from organic waste streams to CO₂-rich off-gases.

What is your current research? There are currently 2 main research lines in my team. The first one is bioprocess intensification. We aim to boost productivities in various ways, e.g. by shifting from batch to (long-term) continuous fermentations, by performing high cell density fermentations through integration of membrane technology, or by in-situ product recovery approaches through combination of a selective separation technology with the bioprocess. The second research line focusses on CO₂-to-product bioconversions. For several years we have been studying the production of biopolymers from CO₂ and renewable energy. This bioprocess requires a potentially explosive gas mixture of CO₂:O₂:H₂. We therefore have special infrastructure that allows us to perform gas fermentations in explosion-proof conditions. Our other research projects in this domain focus on

bio-electrochemical processes.

On a separate note, I have been involved in the inspiring MELISSA project, a closed loop ecosystem aimed at recovering food, water and oxygen from waste. It is intended as a tool to gain understanding of the behaviour of artificial ecosystems, and for the development of life support technology for long term manned space missions, e.g. to Mars.

Why did you join EFB/EBBS? I knew EFB from my earlier research work on environmental issues. The creation of the EBBS section really came at the right moment. Because of the excellent match with my current research interests, I decided to become more active in EFB, to join EBBS and to also get involved as a board member.

Where do you see your contribution as a board member for EBBS? My own background experience and my focus on applied research work is complementary to the areas of expertise of the other board members. This will be of added value for all section activities in general. More specifically, I hope to give the exciting research topics of bioprocess

intensification and gas fermentations a prominent role in the section activities. I want to do this by organization of and active participation in events that cover these topics.

Where do you see EBBS in the future? I sincerely hope EBBS will be a dynamic network that will make concrete progress in its focus area and will effectively contribute to the realization of biotechnology improvements into current manufacturing technologies. This will depend among others on the interest and active participation of industry in the section and section activities.

Would you share an interesting fact about your persona? It seems most of the board members share an interest in music, including me! I am member of a solidarity choir and get a lot of energy from our rehearsals and concerts. Supported by a talented group of musicians, we sing songs from all over the world with a positive message of hope, freedom, peace, equality, etc. More than ever highly topical issues!

Meeting Report: Bioflavour 2015, Frankfurt, Germany, 09-11 September

With more than 150 participants from 23 countries around the world "Bioflavour 2015 – International Conference on Flavour and Fragrance Biotechnology" was an overwhelming success. DECHEMA organized this conference, which was supported by our EFB Section together with other institutions and industrial sponsors. The program included 40 lectures and about 50 posters covering six different areas: "Volatile Natural Products", "Aroma Generation in Fermented Foods and Beverages", "Biocatalysis for Flavours and Fragrances", "Olfactory and Taste Receptors", "Authenticity Control" and two large sessions entitled "From Plant Biosynthesis to Microbial Cell Factories I and II", which clearly represented the major part of the conference program. Among the excellent keynote and invited talks the evening lecture by Birger Lindberg Moller, University of Copenhagen, Denmark, on "Synthetic plant biology: The ultimate way to go green" was clearly a highlight, who illustrated in a very entertaining way the future potential of synthetic biology to deliver green products based on plant metabolic pathways. Also, the keynote by Jutta Heim from Evolva SA, Switzerland, nicely illustrated the power of *Saccharomyces cerevisiae* as a platform food grade microorganism whose metabolism can be comprehensively re-designed by use of yeast artificial chromosomes towards an array of valuable flavour and fragrance molecules. Prime examples of her talk were a new pathway leading to natural



Sarah Reisinger (Amyris) presenting at Bioflavour 2015

vanillin and the synthesis of specific stevioglycosides as superior sweeteners. In another keynote lecture, Chris Curtin, Australian Wine Research Institute, Adelaide, brought in another perspective, namely "The good, the bad and the ugly: volatile sulfur compound metabolism in *S. cerevisiae*" during wine fermentation and presented recent progress in this field made by comprehensive functional genomics. Many companies, such as Firmenich, Amyris, Isobionics, Ginkgo Bioworks, Phytowelt GreenTechnologies and others presented their strategies for microbial production of desired target compounds, ranging from unravelling the genetics of key enzymatic steps in plants to rational and even high throughput strain engineering approaches. With more than 40%, the industry constituted a remarkably high share of all participants of Bioflavour 2015 indicating the increasing impact of biotechnology in this field. Due to their broad

applicability as flavour and fragrance compounds and also their potential as functional ingredients, terpenoids were by far the dominating class of natural products discussed during the conference. Examples ranged from mint and citrus oil monoterpenoids, sandalwood and patchouli oil sesquiterpenoids, to diterpene-derived steviol glycosides or tetraterpenoid-derived C₁₃ norisoprenoids, to name only a few. Lectures on flavour generation during food and beverage fermentation (e.g. new drinks prepared from food by-products with edible basidiomycetes), on biocatalytic approaches (e.g. the use of enzymes in supercritical carbon dioxide), on olfactory and taste receptors as well as on authenticity control of biologically produced flavour compounds perfectly rounded off the conference program. Intense discussions of the lectures, a lively atmosphere during welcome reception, coffee breaks and at the posters as well as a constantly high noise level at the conference dinner were all clear indicators not only for the well-being of the participants but also for the dynamic drive in this area of industrial biotechnology. No surprise, the next Bioflavour conference was already announced during the closing remarks to be held in 2018, which will probably take place in Frankfurt again.

Prof. Jens Schrader, DECHEMA Research Institute, Conference Chair



Thank you all for your patience and support while we have been setting up the section. We hope you have enjoyed [our section newsletters](#) and seen our increasing activities via [social media](#). We are now hoping for some section board members to take a leading role section activities. We would also like to hear your suggestions for future meetings and where you would like them to be hosted. We are currently planning a bio-materials meeting in early 2017.

WE NEED YOU!



**POSITION AVAILABLE:
INDUSTRIAL
COORDINATOR**

New Biotechnology is the official journal of the [EFB](#) and is published bimonthly. It covers both the science of **biotechnology** and its surrounding political, business and financial milieu.



New Impact Factor: 2.898



Member's input invited!

If you have interesting news, suggestions or job vacancies that you would

like to advertise, please, get in touch!

Email us:

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or

EBBS Communications Officer:



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Funding Opportunities & Programmes



ERA-IB 7th Joint Call

ERA-IB-2 has announced the 7th transnational joint and/or ERA-MBT partner countries. Industrial call for multi-lateral research projects using partners are recommended but not mandatory. Projects are expected to start in late 2016. More info [click here](#).

Industrial Biotechnology. This call will be organized in collaboration with ERASynBio and ERA-MBT. This call is aimed to generate joint European research and in the field of industrial biotechnology addressed by synthetic biology and biotechnology approaches. Joint projects must have 3-8 participants from 3 different ERA-IB-2, ERASynBio

If you require help pairing with potential collaborators, we are happy to aid with that!

**Submission of full proposals closes:
1 February 2016 (13:00 CET)**



[@ECB2016](#)

www.ecb2016.com



EUROPEAN FEDERATION OF
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Bioprocessing
Section**

www.efb-ebbs.eu

Do you want to get involved?

If you would like to be part of the new section, if you have an idea for a new meeting in an area of bioengineering or bioprocessing, or if you

would like to assist in section activities, please contact the section co-chairs:

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