

Conference Call

The active participation of many EU4MOFs members in these two workshops gave excellent opportunities for networking, sharing common thoughts and thereby, it produced a huge step forward in aligning the ideas and goals on MOF chemistry within Europe.

The Symposium rounded off by a keynote lecture given by **Erlantz Lizundia** from Basque Center for Materials, Applications and Nanostructures (Spain). His work is focused on Environmental impact assessment, ways of recycling plastic and life cycle assessment. This lecture laid the foundation for a fruitful panel discussion. Herein, the importance of the evaluation of the footprint of MOF synthesis was highlighted, as it can be very different from expected – and has until now generally been understudied in MOFs.

The EU4MOFs Symposium underscored the transformative potential of MOFs in addressing important global issues. The event facilitated meaningful discussions and collaborations, paving the way for future innovations in MOF research and applications. The insights and developments presented at the symposium will undoubtedly contribute to a more sustainable and efficient future. The EU4MOFs COST Action is still growing (Action start date 2 Nov 2023, end date 1 Nov 2027) and constantly looking for more curious scientists to join.

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Grand Challenges for Biotechnology: Health, Food Security, and Global Warming

by Fengwu Bai

The **International Biotechnology Symposium (IBS)** can be dated back to 1960 when the first IBS, then as the International Symposium on Fermentation, was initiated in Rome, Italy. Since then the IBS was rotated among different continents in every four years till 2008 when the 13th IBS was held in Dalian, China, during which the IUPAC Subcommittee on Biotechnology made decision for the IBS to be organized biannually to highlight rapid progress with biotechnology. Six years

had passed since the 18th IBS was held in 2018 at Montreal, Canada, and the 19th IBS finally came back on 30 June-3 July, 2024 in Rotterdam, the Netherlands, which was postponed in fact twice in 2020 and 2022, respectively, due to the direct impact and aftermath of the Covid-19 pandemic.

When the 19th IBS was decided to go to Europe in 2020, it concurred with another prime biotechnology congress, European Congress on Biotechnology (ECB) that is organized also biannually by European Federation of Biotechnology (EFB). No doubt, the combination of the two biotechnology conferences IBS 2024 and ECB 2024 could better explore and optimize various resources, particularly under the post-pandemic situation that is more challenging than ever before, not only for scientists to secure funding to support their travels with international conferences, but also for biotechnology companies still struggling to restore market shares and sale volumes with less enthusiasm to sponsor academic conferences.

IBS 2024 and ECB 2024 were hosted by Dutch Biotechnology Association (NBV) in conjunction with its annual meeting NBV 2024, which were co-chaired by Jeff Cole, EFB President, Fengwu Bai, Chair of the IUPAC Subcommittee on Biotechnology, and Jan Wery, NBV President.

Five theme symposia (sections) were developed by the Scientific Program Committee (SPC): 1) Health, 2) Feeding the future, 3) Mitigating climate change, 4) Industrial biotechnology, and 5) Frontiers of biotechnology. Lectures at different levels including plenary lectures, keynote lectures, and invited lectures were arranged for topics specifically proposed and selected



Fengwu Bai addresses the crowd at the opening ceremony to highlight IUPAC and IBS.



Murray Moo-Young and Yan Feng (middle) with young scholars and graduates

by the SPC members, and established scientists and very active scholars were invited. As the partner of IBS 2024, the Chinese Company Shanghai CHANDO Group Co., Ltd. partially sponsored 18 speakers specially invited outside Europe. Meanwhile, short talks were selected from submitted abstracts, and two-minute presentations were arranged for flash posters to highlight research progress achieved predominately by graduates. About 700 delegates came from more than 50 countries in Europe, Asia, Africa, North America, South America, and Oceania, making the conferences very internationally representative.

Jeff Cole, Fengwu Bai, and Jan Wery addressed at the opening ceremony that was scheduled in the afternoon of Sunday (June 30), introducing EFB, IUPAC and IBS, as well as NBV, respectively. Followed by the opening plenary lecture: *Strategies and applications of systems metabolic engineering of microorganisms*, a hot topic for developing robust microbial strains through rational designs to support cost-effective biomanufacturing of biofuels and other bio-based products, alleviating dependence on fossil resources such as coal, crude oil, and natural gas for sustainable socio-economic development, which was presented by Sang Yup Lee at Korea Advanced Institute of Science and Technology, Korea, one of the pioneers in metabolic engineering and synthetic biology.

After Sang-Yup Lee's opening plenary lecture, all participants were invited for the Reception and Korea Night generously sponsored by Asian Federation of Biotechnology (AFOB) and Korean Society for Biotechnology and Bioengineering (KSBB), a wonderful experience for many graduates, not only enjoying Dutch beer and wine, but also networking with established scientists and engineers such as Sang-Yup Lee, Murray Moo-Young at the University of Waterloo, Canada, the most senior member of the IUPAC Subcommittee on Biotechnology, and Yan Feng at Shanghai Jiao Tong University, China.

All keynote lectures (57) and invited lectures/short talks (97) were scheduled within the following

three days from Monday to Wednesday (1-3 July) for various topics such as: Novel approaches to the production of biologicals (Health); Emerging agriculture technologies (Feeding the future); Biotechnological solutions towards net zero and life cycle assessment (Mitigating climate change); Bioprocesses, bioreactors and biorefineries for bio-based products (Industrial biotechnology); Enzyme discovery and engineering (Frontiers of biotechnology). Poster presentations and flash poster shows were also arranged.

Three prestigious scholars from academia and industry were invited for plenary lectures to close academic activities with the 3 days. Michael Köpke, one of the awardees of the Presidential Green Chemistry Challenge Award for Greener Synthetic Pathways and Chief Innovation Officer at Lanza Tech, USA, presented "*Innovating for a new carbon economy: Building a circular gas fermentation industry*" to mitigate greenhouse gas effect. Chris Bowler, CNRS Director of Research at IBENS, Paris, France, highlighted *Tara Oceans*, an international and multidisciplinary project to assess the complexity of ocean life. After the closing ceremony, John van der Oost from Wageningen University, the Netherlands, reviewed CRISPR/Cas with such a topic: *From evolution to revolution*.

In addition to academic interactions, various other activities were organized, including Elsevier workshop to tutor graduates in writing good papers for publication in academic journals and the highlight of funding opportunities with European Research Council for young scholars to write proposals with high quality for grants to nurture their career development at early stage.

At the closing ceremony in the afternoon of Wednesday (3 July), Fengwu Bai announced the host city of IBS 2026, Kobe, Japan, and invited Akihiko Kondo from Kobe University and Haruyuki Atomi from Kyoto University to introduce the city, a hub of innovation in Japan, particularly for biotechnology research and commercialization.

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