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International Society for Electroporation-Based Technologies and Treatments

ISSN: 2463-9850

December 2023

read online at goo.gl/k2q9A0

Newsletter No. 91

9th School on Pulsed Electric Field Applications in Food and Biotechnology, 4 – 8 September 2023, Vienna (AT)

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The 9th School on Pulsed Electric Field Applications in Food and Biotechnology took place from 4th – 8th September 2023 at the University of Natural Resources and Life Sciences (BOKU) Vienna, Austria. 22 participants from all over Europe and beyond enjoyed the intensive four-day training program. It consisted of lectures given by 12 leading international PEF experts as well as practical courses conducted by a team of 14 postdocs, young researchers and students working in the field of emerging food and bioprocessing technologies.

The 9th PEF School was a joint effort between the BOKU Institute of Food Technology with strong support from ISEBTT, the University of Ljubljana, the Masaryk University Brno and the City of Vienna. The content of the courses was designed for both, academic and industrial researchers and the industrial relevance of PEF and other emerging technologies was also reflected by the support from company partners such as Elea, Vitave, mPOR, Roplass and CellEctric Biosciences.

The program of the PEF School covered all relevant areas from the basics of electroporation up to industrial applications and the legislative framework. Five practical courses on different topics were offered each afternoon in order to allow the participants to gain hands-on experience related to the theoretical insights obtained during the lectures, short presentations and poster sessions in the morning. To round off the scientific agenda a diverse program of social events was organized in the evenings in order to explore the historical Vienna, the Viennese vineyards or Vienna Prater.

During the lectures, a special emphasis was put on providing a basic understanding of pulse generation and application and the occurring phenomena of electroporation considering the micro and nano scale of applied pulses. The use of PEF for plant cell disintegration as well as microbial inactivation was covered from the perspective of relevant process variables, treatment conditions and particularities of the different matrix properties and target structures.

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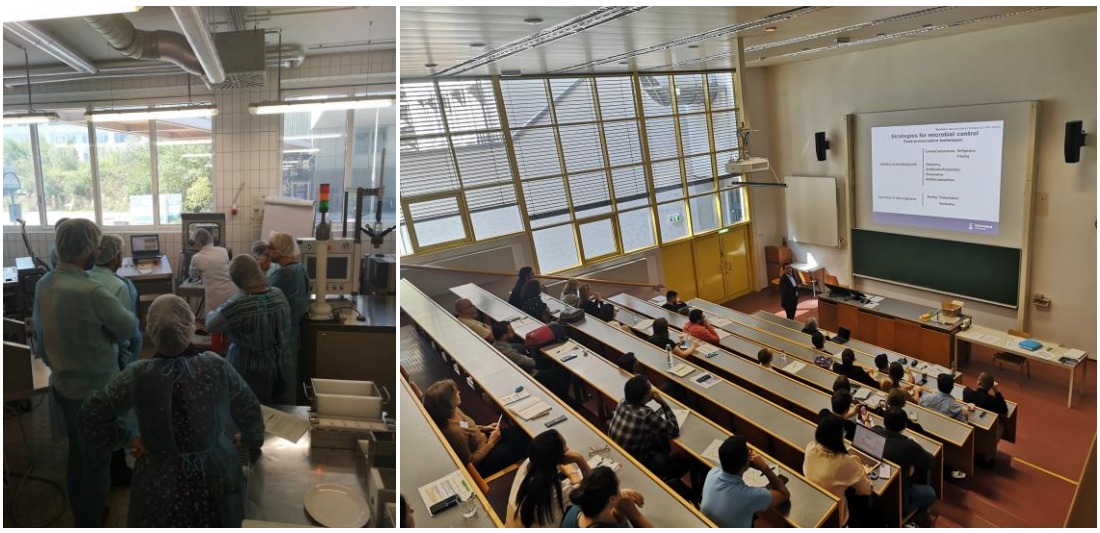
Providing up to date information on available methods to detect electroporation, on the differentiation between occurring effects and on best practices for designing experiments was the aim not only during the lectures but also during the practical courses. A view into the history of industrial PEF applications as well as an overview on the wide range of current use cases in the industry did once more underline the versatile potential of the technology and was set into perspective by also discussing other alternative or emerging food processing concepts and their role for a sustainable food system. Finally, the legislative framework was pointed out to be an important aspect for the successful establishment of new products and processing concepts in the food industry. The possibility to turn the theory into practice was much appreciated by the participants and the practical courses on equipment design and pulse generation, microbial inactivation, plant cell disintegration, modelling and simulation as well as on other emerging technologies presented in the BOKU food technology pilot plant were almost too short to cover all the points and questions raised by the participants.

The event was very well perceived by the participants and provided a timely update on recent progress in research and process development. It promoted the interaction between different research groups and will further facilitate the cooperation among academic partners and between academia and industry.

I would like to thank every participant, lecturer, sponsor and the organizing team for the attendance, contribution and support and I am looking forward to the next edition of the PEF School as well as other related events in the field.



Practical work (left) and lectures (right) as essential elements of every PEF School.

Forthcoming events

XXVIII International Symposium on Bioelectrochemistry and Bioenergetics of the Bioelectrochemical Society

Madrid, May 19 – 23, 2024

https://congresosalcala.fgua.es/bes2024

A trip through the Viennese vineyards, concluding in a gastronomic experience – local food tasting with wine accompaniment.

Newsletter is issued in electronic form only by The International Society for Electroporation-Based Technologies and Treatments (ISEBTT).

ISSN: 2463-9850