



Newsletter No. 113

10th School on Pulsed Electric Fields Applications in Food and Biotechnology; Fisciano (SA), 1–5 September 2025

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The 10th edition of the School on Pulsed Electric Fields (PEF) Applications in Food and Biotechnology took place from 1–5 September 2025 at ProdAI Scarl and the University of Salerno (Campus of Fisciano, Italy). Returning to Salerno after ten years, this anniversary edition marked a milestone in the history of the PEF School, celebrating both the scientific achievements of the past decade and the growing industrial implementation of the technology.

The event gathered **22 participants from 7 countries**, offering them an intensive week of scientific training, hands-on practice, and networking opportunities. The program featured **more than 20 international experts**, who delivered **lectures** and engaged in **roundtable discussions** on fundamental and advanced aspects of electroporation and PEF technology, complemented by **flash presentations from young researchers**.

The content of the courses was designed to serve both academic and industrial participants, reflecting the strong **synergy between fundamental research and applied developments**. The lectures provided a broad overview of PEF and electroporation, ranging from **basic principles of high voltage pulse generation and electroporation phenomena** to **numerical simulation and process modelling**, enabling participants to understand and predict treatment effects across different systems.

A strong focus was given to **applications in food processing**. Participants explored the use of PEF for **microbial inactivation and gentle preservation**, gaining insight into process parameters, treatment conditions, and the specificities of different food matrices. The **impact of PEF on food quality attributes** was discussed together with its role in enhancing drying, rehydration, and fermentation processes. The integration of PEF into **sustainable food systems** was another central theme, with lectures on the valorization of by-products and biorefinery concepts highlighting how PEF can contribute to the circular bio-economy. Highlights on **other emerging technologies** such as ohmic heating and high-pressure processing, were also given together with **legislative frameworks** of new processes and **consumer acceptance** of products obtained with non-convectonal production lines.

Industrial perspectives were also emphasized, with technology providers and end-users (ELEA Technology GmbH, Vitave Tech, Scandinova, Opticept, Frudist) presenting current case studies, equipment developments, and market opportunities. This provided participants with a clear view of the challenges and prospects for PEF adoption at an industrial scale. Beyond food, the program also offered a glimpse into **non-food and medical applications**, illustrating the versatility of electroporation in areas ranging from bioprocessing to healthcare.

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Each afternoon, participants engaged in **practical laboratory and pilot plant courses**, applying theoretical concepts to experiments on microbial inactivation, plant tissue disintegration, and other novel technologies. These sessions were made possible thanks to the **contribution of people and equipment from BOKU University (Austria), ELEA Technology (Germany), and VITAVE Tech (Czech Republic)**, as well as of **people from University of Salerno**, whose support ensured participants could gain authentic hands-on experience on PEF systems, ohmic heating, ultrasound and high-pressure homogenization technologies.

Beyond the lectures and lab sessions, the **social program** created opportunities for interaction in a more informal setting. Participants enjoyed cultural visits and local gastronomy, which provided a stimulating environment for building new collaborations and strengthening ties between academia and industry.

The 10th PEF School successfully underlined the **fil rouge connecting past and present breakthroughs**, while pointing to the future of PEF applications. The high level of engagement and exchange confirmed the event as a unique platform for advancing knowledge, sharing expertise, and inspiring innovation in the field.

We extend our sincere thanks to all participants, lecturers, and sponsors. I'm indebted to the organizing team for their invaluable collaboration making this edition such a memorable success. A special acknowledgment goes to Roberta Ferrari, whose deep engagement and unique contribution deserve particular recognition. We now look forward with great enthusiasm to the 11th PEF School and other related events in the years to come.

*The participants of
the 10th PEF School
in Salerno, Italy,
September 2025*



Forthcoming events

19th interdisciplinary postgraduate course and international workshop Electroporation Based Technologies and Treatments (EBTT)

Ljubljana, November 10 – 15, 2025 (*on-site* and *on-line* event)

<https://2025.ebtt.org/>

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*The Organising Committee
of the 10th PEF School in
Salerno, Italy. From the left
to right: Özge Taştan,
Serena Carpentieri, Katerina
Koshenaj, Roberta Ferrari,
Giovanna Ferrari, Emadaldin
Abdurrahman, and
Francesco Donsì. Photo by
Damijan Miklavčič.*

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