



Newsletter No. 77

One-day Pulsed Field Ablation (PFA) School
Barcelona, August 25, 2022

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The One-day PFA School was organized for its first edition on August 25, 2022 in Barcelona (Spain) at Universitat Pompeu Fabra. This educational event was organized by members of the Biomedical Electronics Research group (<http://berg.upf.edu>) who actively develop research in the area of Pulsed Field Ablation (PFA) and are members of the International Society for Electroporation-Based Technologies and Treatments (ISEBTT).

PFA, is the term adopted in the electrophysiology medical community to name the use of irreversible electroporation for the ablation of cardiac tissue in the treatment of cardiac arrhythmias. This field has made remarkable advances in the last 5 years, and since the arrival of the first commercially available PFA system last year in Europe, more than 5000 patients have been successfully treated with this technology. Last week of August a second PFA system received CE mark and announced the first clinical cases in Germany and Croatia.

The aim of this school was to explain the bases of Irreversible Electroporation (IRE) to cardiologists and other biomedical professionals doing (or aiming at doing) research on **Pulsed Field Ablation (PFA)**. The final goal was to bring together two different scientific communities: Electrophysiology & Electroporation, and promote the collaboration and scientific exchange between them. The panel of lecturers was mostly composed by recognized experts in the field of electroporation with expertise that predates its use for cardiac ablation (http://eventum.upf.edu/go/PFA_school_2022). Thirty-seven attendees with a wide variety of professional backgrounds from different countries (Spain, USA, Canada, Ireland, Germany, etc.) joined this only-in-person School.

During this intensive day, the scientific program included a review from the basic concepts to the final clinical application of PFA. First, Damijan Miklavčič (University of Ljubljana, Faculty of Electrical Engineering, Slovenia) provided a general overview of the PFA field and some insights in the biophysical bases of the technique. Next, Lluís Mir (CNRS, France) provided a basic view of the mechanisms of membrane permeabilization. Following, Rafael Davalos (Bioelectromechanical Systems Laboratory, Virginia Tech, USA) explained all the specific aspects of irreversible electroporation as an ablation modality. Antoni Ivorra (Department of Information and Communication Technologies, Universitat Pompeu Fabra, Spain) went into the details of the collateral events produced during IRE. After the lunch break, Tomás García-Sánchez (Department of Information and Communication Technologies, Universitat Pompeu Fabra, Spain) reviewed the particularities of IRE applied to the case of cardiac tissue. Then, Elad Maor (Tel Aviv University-Sheba Medical Center, Israel) made a thorough comparison between radiofrequency ablation and PFA.

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Finally, Atul Verma (McGill University Health Centre, Canada) provided a clinical perspective of the current PFA field and its future challenges. The scientific program ended with a round table session where all participants and speakers had the opportunity to interchange ideas, clarify doubts and discuss about the future challenges of this technology.

In the evening, after the lectures, attendees could enjoy a social event with nice views of the city from the Barcelona Port cable car that ended in Montjuic mountain where the school arrived at its end with a dinner.

One of the conclusions of this event is that there is still a lot of work to do. As electroporation experts, ISEBTT community should take a leading scientific role in improving the knowledge about this technology and actively contribute to its development. If all the promises around PFA technology come true, we are in front of what will become the most widely used application of electroporation in medicine.

To learn more about PFA, we invite you to attend the two special sessions about the topic that will be organized during the 4th World Congress on Electroporation (<https://wc2022.electroporation.net>) next October in Copenhagen.

We thank the two sponsors (Galaxy Medical and Medlumics) and the other institutions (ISEBTT, QUAES, Marie-Curie IF program from European Commission and Spanish Research Agency) for their generous support. Finally, the organizing committee would like to warmly thank all lecturers for sharing their knowledge and enabling a successful PFA School.



Group photo; lecturers & participants of the One-day Pulsed Field Ablation (PFA) School.

Forthcoming events

4th World Congress on Electroporation and Pulsed Electric Fields in Biology, Medicine, and Food & Environmental Technologies

Copenhagen, October 9 – 13, 2022

<https://wc2022.electroporation.net>

16th interdisciplinary postgraduate course and international workshop Electroporation Based Technologies and Treatments (EBTT)

Ljubljana, November 13 – 19, 2022

<http://www.ebtt.org>

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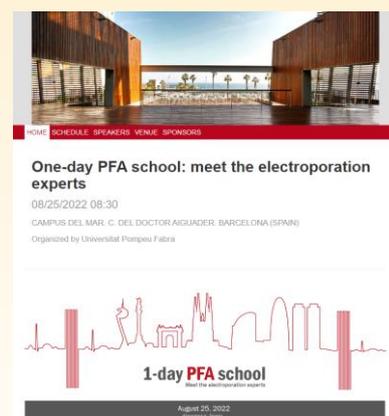
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Homepage with more info:
http://eventum.upf.edu/go/PFA_school_2022.

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