



Newsletter No. 85

The Justin Teissié Award for young scientists

Newsletter by: Michal Cifra, The Institute of Photonics and Electronics, Czechia
cifra@ufe.cz

Wouldn't the electromagnetic field be cool if it could be used for control of molecules and diseases cure?

Well, what molecules should we target? Cellular fibers - microtubules are in our project.

We first asked in the computer simulation: will electric field have any implication?

Oh yeah, under the field strong enough tubulin rotates, changes and surprises us.

Then we put the real tubulin to tube and asked, how it will work with you, dude?

Lo and behold: the electric pulses indeed affect the way tubulin self-assembles.

I wrote this poem on our research around one year ago and in this newsletter, I would like to take the opportunity to dedicate it to the memory of Justin Teissié (1947-2020). Carrying his name, "The International Society of the Electroporation-Based Treatments and Technologies (ISEBTT) grants the Justin Teissié Award every two years at the World Congress on Electroporation, to a young scientist who has made an important contribution to the field of Electroporation. The main purpose of this Prize is to keep alive Dr Teissié's memory and scientific legacy, as well as to foster excellence in the Electroporation-Based Treatments and Technologies community, by recognizing outstanding scientific contributions of early-stage researchers. The scientific contribution must relate to any of the topics and areas of interest of the ISEBTT." (from the ISEBTT website <https://www.electroporation.net/justin-teissie-award/>).

I was fortunate to be granted the Justin Teissié Award at the 4th World Congress on Electroporation and Pulsed Electric Fields in Biology, Medicine, and Food & Environmental Technologies which took place in Copenhagen, Denmark from October 9 to 13, 2022.

This Award named after Justin Teissié is of great value to me. The main reason is that I feel very inspired by his scientific approach and interests in the various aspects of mechanisms of the electric field effects on biological systems, including electrochemistry and proteins, beyond the traditional membrane electroporation mechanisms.

Continued verso...

And is this all relevant to cells? For that we developed a special chip-based assay.

Using our special chips, we can see what happens to cytoskeleton bits right during the action of electric pulses in super-resolution microscope ensembles.

While the electric pulses don't kill the cells microtubule cytoskeleton remodels itself.

Want to learn more about our electric trick? Reach out to Bioelectrodynamics and we can speak.



Newsletter Editor
Damijan Miklavčič
University of Ljubljana, Slovenia
damijan.miklavcic@fe.uni-lj.si

Newsletter Technical Editor and Website Administrator
Samo Mahnič-Kalamiza
University of Ljubljana, Slovenia
samo.mahnic-kalamiza@fe.uni-lj.si

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



International Society
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In our Bioelectrodynamics research team, the focus is on technologies and science of electromagnetic and dielectric properties of proteins, particularly cytoskeletal proteins, which are crucial for biological self-organization and cell division processes. Particularly, in recent years, we advanced the understanding of fundamental effects of pulsed electric field on proteins and protein assemblies. To that end we created various integrated chip platforms, which enable controlled delivery of PEF to small bio-samples while imaging PEF effects with advanced microscopy techniques. Our current work explores oxidative effects on proteins initiated or modulated by pulsed electric field, and mechanisms of intense sub-THz electric field on protein vibration modes. Feel free to learn more on the website of our Bioelectrodynamics research team (<https://www.ufe.cz/en/team/bioelectrodynamics>) as well as our social media channels (Twitter, FB, LinkedIn).

To conclude, I would like to encourage colleagues from our research community to consider nominations or direct applications for the Justin Teissié Award (for those under 40 years old).



Photo from the award ceremony in Copenhagen.

Forthcoming events

9th School on Pulsed Electric Field Applications in Food and Biotechnology

Vienna, September 4 – 8, 2023

<https://pefschool2023.electroporation.net>

International symposium “The legacy and the spirit of Lojze Vodovnik”

on-site and on-line, September 6, 2023

<https://tinyurl.com/vodovnik-symposium>

16th International Bioelectrics Symposium (BIOELECTRICS 2023)

Lisbon, September 10 – 13, 2023

<https://bioelectrics2023.pt>

17th interdisciplinary postgraduate course and international workshop Electroporation Based Technologies and Treatments (EBTT)

Ljubljana, November 12 – 18, 2023 (on-site and on-line event)

<https://2023.ebtt.org>

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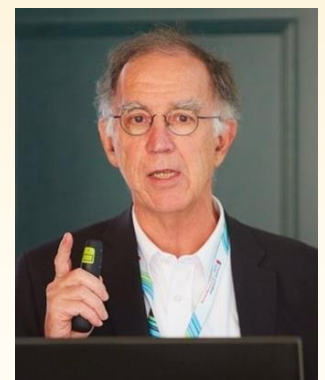
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Justin Teissié (1947 – 2020)

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