

## Dear Z43 Partners, Friends, and Followers

We hope you have had an exciting summer! At Z43, many colleagues took the opportunity to enjoy their vacation in Switzerland and across Europe as the borders reopened after a long lockdown. Nevertheless, we have some news to share with you. Enjoy the read!

### COMPUTATIONAL LIFE SCIENCES

## o<sup>2</sup>S<sup>2</sup>PARC Year 5 Award



IT'IS has received its fifth year of funding of its flagship project: the development of the "Open Platform for Online Simulations for Stimulating Peripheral Activity to Relieve Conditions" (o<sup>2</sup>S<sup>2</sup>PARC) as part of the National Institutes of Health Common Fund's "Stimulating Peripheral Activity to Relieve Conditions" [SPARC program](#). IT'IS will continue to further extend the development of technology for web-based simulations and treatment planning tools. During year 5, the team will build on the many functionalities already established for the o<sup>2</sup>S<sup>2</sup>PARC platform, with the main focus on strengthening and polishing the platform for public release, developing a framework to establish control strategies for electroceuticals, and implementing infrastructure to enable users to create and share their own simulators and modules. Read more [here](#).

### MEASUREMENT

## New API for MAGPy V1.0

Simple and powerful: The new application programming interface (API) of MAGPy V1.0 allows the programming and easy integration into customer-specific applications for complex environments. Only a few lines of codes are required to



enable (i) complex scanning with a robot (e.g., below or inside a car), (ii) remote or long-term monitoring of field levels, (iii) monitoring in high-field strength or hazardous environments, and (iv) applications where fields are to be measured under automated control at several peak frequencies. Watch this [video](#) to experience the new MAGPy-API!

### SIMULATIONS

## Release of the Dielectric Materials Database

Following the release of the most comprehensive [database](#) for tissues by the IT'IS Foundation, SPEAG has now made available the broadband dielectric properties of the materials used in their products (up to 67 GHz), such as phantoms, liquids, etc. The new dielectric materials database allows experiments to be supplemented with simulations. Check it out [here!](#) Z43 is committed to continuously updating and extending both databases in the future.

OTHER

## Waves – Dive in!



visual: ETH Zürich

We are proud to contribute an exhibit on radiofrequency measurement to the Waves special exhibition at focusTerra – [ETH Zurich!](#) The exhibition “[Waves – Dive in](#)” runs until 5 March 2023.

RESEARCH

## PUBLICATIONS

- Reflection Properties of the Human Skin From 40 to 110 GHz: A Confirmation Study**  
A. Christ, et al., 2021, Bioelectromagnetics, 42, 22362, doi: 10.1002/bem.22362 (online 21 June 2021)
- Transverse Confinement of Electron Beams in a 2D Optical Lattice for Compact Coherent X-Ray Sources**  
A. Fallahi, et al., 2021, New Journal of Physics, 23, 1367–2630, doi: 10.1088/1367-2630/ac1a99 (online 04 August 2021)
- Induced Radiofrequency Fields in Patients Undergoing MR Examinations: Insights for Risk Assessment**  
A. Yao, et al., 2021, Physics in Medicine and Biology, doi: 10.1088/1361-6560/ac212d (online 26 August 2021)
- Temperature Dependence of the Microwave Dielectric Properties of  $\gamma$ -Aminobutyric Acid**  
J. Hou, et al., 2021, Scientific Reports, 11, 18082 (online 10 September 2021)
- Radio-Frequency Exposure of the Yellow Fever Mosquito (*A. aegypti*) from 2 to 240 GHz**  
E. De Borre, et al., 2021, PLOS Computational Biology (accepted for publication)

Z43 SOCIAL

## Summer Night Party



At the end of August, Z43 hosted our traditional (Corona-compliant) summer night party with drinks, nibbles, (vegetarian) sausages and – not to forget – the obligatory ice cream car for dessert which was very well attended despite the cold night.

