

Cutting-Edge Solutions for Medical Technology

# Sim4Life User Workshop @ ISMRM 2022

Tuesday, May 10, 18:30 – 22:00

Venue: Room London II, Novotel ExCeL, London, UK

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ISMRM 2022  
Booth #G30

## Agenda

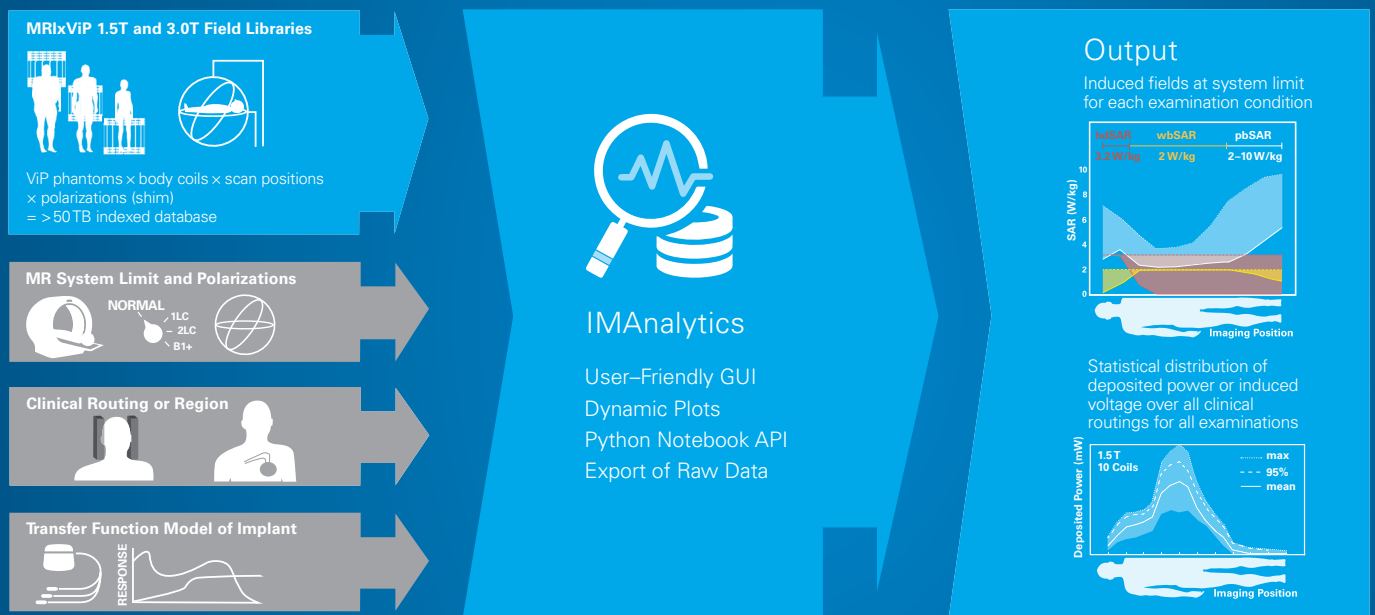
- 18:30 – 18:35 Welcome  
*Michael Oberle, ZMT Zurich MedTech AG, Switzerland*
- 18:35 – 19:00 **Keynote Speech**  
Modeling Gradient-Induced Electric Fields with Relevance to Peripheral Nerve Stimulation Safety in MRI  
*Brian Rutt, Stanford University, USA*  
*Peter Roemer, GE Healthcare (retired), USA*
- 19:00 – 19:15 Coupled Electromagnetic-Neurodynamic Modeling for MRI  
*Mathias Davids, Harvard Medical School, USA*
- 19:15 – 19:30 RF Coil Design and Safety Evaluations with Sim4Life  
*Özlem Ipek, Kings College London, UK*
- 19:30 – 19:45 Break
- 19:45 – 20:05 Updates on MRI Safety  
*Michael Steckner, Canon Medical Research USA, Inc., USA*
- 20:05 – 20:25 Sim4Life's IMAnalytics Suite – Bringing RF Implant Safety Evaluations to the Next Level  
*Mélina Bouldi, ZMT Zurich MedTech AG, Switzerland*
- 20:25 – 20:40 MITS-TT: A New Generation of Compact Medical Implant Test Systems  
*Lena Kranold, IT'IS Foundation, Switzerland*
- 20:40 – 20:50 Sim4Life – What's Next?  
*Michael Oberle, ZMT Zurich MedTech AG, Switzerland*
- 20:50 – 22:00 Light Dinner

To register, please send an email to [s4l-sales@zmt.swiss](mailto:s4l-sales@zmt.swiss)

## NEW MODULES AND FUNCTIONALITIES

### IMAnalytics Suite V1.0

This software package includes the ready-to-use, FDA-qualified IMAnalytics, the only solution for fast and fully automated characterization of RF-induced heating or induced voltages of active implantable medical devices according to ISO 10974 (Tier 3), and for extraction of radiofrequency-induced electric fields in a region of interest (Tier 2 or ASTM F2182 scaling). IMAnalytics Suite V1.0 introduces ZMT's novel IMAnalyticsLAB for fast and error-proof experimental transfer function validation, enabling straightforward prediction of the ISO 10974 Tier 3 *in vitro* deposited power or induced voltage for different test routings, incident field polarizations, and tissue-simulating media. This is achieved by means of pre-computed induced fields (MRixLAB, IT'IS Foundation, Switzerland) in ZMT's unique Test Field Diversity phantom. A streamlined graphical user interface provides access to all necessary tools and enables direct launch of Jupyter notebooks for customization or integration of IMAnalytics Suite V1.0 into the overall R&D process.



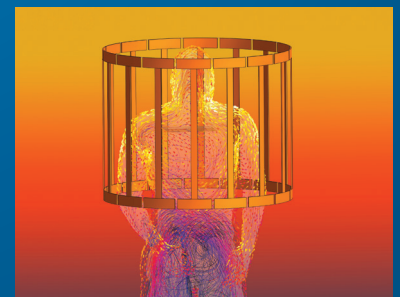
### Neuronal Dynamics Simulation : T-NEURO Module

The updated T-NEURO module will take your neurostimulation applications to the next level. Neuronal simulations can be run remotely, offloading time and resource-intensive simulations to any high-performance-computing machine in your network. Axon discretization has been boosted by more than an order of magnitude, achieving discretization of 1,000 axons in 180 seconds. A new class of axon models, the A-Delta class of spinal axon afferents, is now included, enabling more detailed neurostimulation models of the spinal cord. In addition, improved support for assignment of realistic anisotropic distributions based on diffusion weighted images is provided.



### Joseph becomes Eddie cV3.1: New Male Model added to the ViP

The new Virtual Population (ViP) model Eddie cV3.1 (IT'IS Foundation, Switzerland) brings the original Visible Human male model, released in the early 2000s by the National Library of Medicine, to new life in superior quality and consistent with other ViP models. The Eddie computable model is 1.81 m tall and weighs 106 kg, featuring 323 tissues fully compatible with the IT'IS Material Properties Database, which has been recently updated for low frequencies. Eddie cV3.1 features detailed peripheral nerves and can be posed with the Poser tool in Sim4Life. The Eddie model's vasculature tree and peripheral nervous system are particularly detailed.



To learn more, visit us at [booth #G30](#) at ISMRM 2022.