

ISTET 2024

XXII International Symposium on Theoretical Electrical Engineering

**September 2nd – September 4th,
2024**

– Program –

University of Stuttgart

Campus Vaihingen

Pfaffenwaldring 31, Lecture Hall V31.01

Monday September 2, 2024

12:00	Registration
13:00	Plenary Talk Fedor Jelezko (Ulm University, Ulm, Germany) Tba
13:45	Coffee break
14:00 – 15:15	Invited Session “200 years of Kirchhoff”
14:00 – 14:25	Wolfgang Mathis (Leibniz Universität Hannover, Hannover, Germany) Gustav Kirchhoff’s Contributions to Electrodynamics – On the 200th birthday of Gustav Kirchhoff
14:25 – 14:50	Peter Russer (Technical University of Munich, Munich, Germany) Network methods in field calculations
14:50 – 15:45	Coffee break
15:45 – 17:05	Session Photonics
15:45 – 16:05	N.N. (ims chips, Stuttgart, Germany) Photonics in quantum applciations
16:05 – 16:25	Roman Kolesov (University of Stuttgart, Stuttgart, Germany) Tba
16:25 – 16:45	N.N. (ims chips, Stuttgart, Germany) Photonic interconnects and testing
16:45 – 17:05	Pavel Ruchka (University of Stuttgart, Stuttgart, Germany) Coupling single photon emitters to fibers
	End of day 1

Tuesday September 3, 2024

09:00 – 09:45	Plenary talk Romanus Dyczij-Edlinger (Universität des Saarlands, Saarbrücken, Germany) Finite-Element Theory, Modelling, and Optimization for Electromagnetics
09:45 – 10:15	Coffee break
10:15 – 11:35	Session Quantum Sensors
10:15 – 10:35	Magnus Benke (University of Stuttgart, Stuttgart, Germany) Tba
10:35 – 10:55	Khubaib Khan (University of Stuttgart, Stuttgart, Germany) Chip-integrated B1 field generation for NV magnetometer
10:55 – 11:15	Hadi Lotfi (University of Stuttgart, Stuttgart, Germany) Chip-integrated solutions for nanoscale NMR using NV centers
11:15 – 11:35	Philipp Hengel (University of Stuttgart, Stuttgart, Germany) Low-noise transimpedance amplifiers for ODMR
11:35 – 13:00	Lunch break
14:00 – 15:20	Session Theoretical Electrical Engineering
14:00 – 14:20	Paula Respondek, Jacob Thönes, Sascha Spors, Simon B. Adrian (Universität Rostock, Rostock, Germany) Investigation of Boundary Element Formulation for the Forward Problem of Electrical Impedance Tomography with a Complete Electrode Model
14:20 – 14:40	Ana Vučković, <u>Natalija Ivković</u> , Isidora Jovanović, Mirjana Perić, Nebojša Raičević (University of Niš, Niš, Serbia) Utilizing Machine Learning for Accurate Field Calculation of Trapezoidal Cross-Section Ring Magnet
14:40 – 15:00	<u>Valeri Mladenov</u> , Stoyan Kirilov (Technical University of Sofia, Sofia, Bulgaria) A New Memristor Model with Parasitic Parameters
15:00 – 15:20	<u>Georgi Tsenov</u> , Stoyan Kirilov, Valeri Mladenov (Technical University of Sofia, Sofia, Bulgaria) SPICE memristor model based on estimates from measured data
15:20 – 15:50	Coffee break

15:50 – 16:50	Session Quantum Physics
15:45 – 16:05	Laetitia Farinacci (University of Stuttgart, Stuttgart, Germany) Sensing and harnessing the quantum nature of spins at the atomic scale
16:05 – 16:25	Vadim Vorobev (University of Stuttgart, Stuttgart, Germany) Tba
16:25 – 16:45	Christian Ast (Max-Planck-Institute for Solid State Research, Stuttgart, Germany) Modeling the Electron Spin Resonance Spectrum in Scanning Tunneling Microscopy
16:45 – 17:05	Alexander Trachtmann (University of Stuttgart, Stuttgart, Germany) Tba
18:30 Open end	Conference dinner Details will be announced at the conference

Wednesday September 4, 2024

09:00 – 09:45	Plenary talk Ulrich Jakobus (Altair, Böblingen, Germany) Evolution of Computational Electromagnetics as Applied to Real World Industrial Problems
09:45 – 10:15	Coffee break
10:15 – 11:35	Session Quantum Technologies
10:15 – 10:35	Michal Kern (University of Stuttgart, Stuttgart, Germany) On-chip spin manipulation using voltage-controlled oscillators
10:35 – 10:55	André Buchau (University of Stuttgart, Stuttgart, Germany) Electromagnetic fields and models of coupled resonant coils
10:55 – 11:15	Philipp Karl (University of Stuttgart, Stuttgart, Germany) Plasmonic single photon detectors
11:15 – 11:35	Yichao Peng (University of Stuttgart, Stuttgart, Germany) Scalable FPGA backends for magnetic resonance applications
11:35 – 13:00	Optional lunch
	End of conference