



Program

ASDAM 2022 14th International Conference on Advanced Semiconductor Devices and Microsystems
Sunday 23th October 2022

15:00 20:00	Registration
19:00 22:00	Welcome party

ASDAM 2022 14th International Conference on Advanced Semiconductor Devices and Microsystems
Monday 24th October 2022

8:00 9:00	Registration
9:10 9:20	Introduction & Welcome
9:20 10:00	The Research Fab Microelectronics Germany (FMD): strengthening micro- and nanoelectronics on a European scale Oliver Pyper (Forschungsfabrik Mikroelektronik Deutschland, Fraunhofer e.V., Germany) <i>Plenary lecture</i>
Session: Characterization of devices I.	
10:00 10:40	The structure of optimized ohmic contacts for optimized InAlGaN/GaN HEMTs Pierre Ruterana (Center of Research on Ions Materials and Photonics, France) <i>Invited lecture</i>
10:40 11:00	Coffee break
11:00 11:20	Study of the defects distribution in power SiC MOSFET before and after applied electrical stress Lubica Stuchlíková (Slovak University of Technology in Bratislava, Slovakia)
11:20 11:40	Strain relaxation versus luminescence in (0001) InGaN/GaN quantum wells for emission beyond the green range Magali Morales (Center of Research on Ions Materials and Photonics, France)
11:40 12:00	Interface states analysis of Al₂O₃/GaN MOS capacitors with semi-insulating C-doped GaN Roman Stoklas (Slovak Academy of Sciences, Slovakia)
12:00 13:00	Poster session
13:00 14:00	Lunch
Session: Characterization of devices II.	
14:00 14:40	On the Figures of Merit of reduced Graphene Oxide Transistors: what needed for reliable applications Nicolò Lago (University of Padova, Italy) <i>Invited lecture</i>
14:40 15:00	Electrical characterisation techniques for Li-ion battery degradation analysis and state of health estimation Miroslav Mikolášek (Slovak University of Technology in Bratislava, Slovakia)
15:00 15:20	Cross-sectional SEM-EBIC analysis of semi-vertical GaN power diodes Juraj Priesol (Slovak University of Technology in Bratislava, Slovakia)
15:20 15:40	Importance of Mechanical Stress Study in STI based BCD Technology Ladislav Šeliga (Onsemi, Czech Republic)
15:40 16:00	Coffee break
Session: Modelling and Simulations	
16:00 16:40	Computer-Based Investigations on the Reliability, Robustness, and Failure Mechanisms of High-Power Devices Gerhard Wachutka (Technical University of Munich, Germany) <i>Invited lecture</i>
16:40 17:00	A coupled model of heat spreading and flow boiling for two phase cooling in microchannels Rubern Betsema (TNO, Netherlands)
17:00 17:20	Electro-Thermo-Mechanical Simulation Analysis and Optimization of SiC Power MOSFET under UIS Test Condition Aleš Chvála (Slovak University of Technology in Bratislava, Slovakia)
17:20 17:40	Simulation of Thermo Mechanical Properties and Reliability of Power IGBT Module František Koval' (Slovak University of Technology in Bratislava, Slovakia)
17:45 18:40	Dinner
19:00 20:00	Wine tasting

ASDAM 2022 14th International Conference on Advanced Semiconductor Devices and Microsystems
 Tuesday 25th October 2022

Session: Materials and technologies I.

9:00 9:40	Ga vacancies in MOVPE prepared GaN layers Alice Hospodková (Czech Academy of Sciences, Czech Republic) <i>Invited lecture</i>
9:40 10:00	Investigation of metal particle-free gallium telluride nanowire growth using conventional CVD method Saviz Parsa Saeb (Slovak Academy of Sciences, Slovakia)
10:00 10:20	Study of InAlGa/GaN HEMT structures by DLTFs with optical excitation Matej Matúš (Slovak University of Technology in Bratislava, Slovakia)
10:20 10:40	Structural and electrical properties of Ga₂O₃ transistors grown on 4H-SiC substrates Fedor Hrubíšák (Slovak Academy of Sciences, Slovakia)
10:40 11:00	Coffee break

Session: Materials and technologies II.

11:00 11:20	Transport properties of Si-doped β-Ga₂O₃ grown by liquid-injection MOCVD Fridrich Egyenes (Slovak Academy of Sciences, Slovakia)
11:20 11:40	Electron beam-plasma vacuum deposition of very thin carbon films: Photocathode application Jozef Huran (Joint Institute for Nuclear Research, Russian Federation)
11:40 12:00	Sulfurization of nickel foam as a binder-free supercapacitor electrode Peter Ondrejka (Slovak University of Technology in Bratislava, Slovakia)
12:00 13:00	Poster session: Telemedical and smart system and solutions
13:00 14:00	Lunch

Session: Electronic structures, devices and systems

14:00 14:40	SiC Power TrenchMOS Transistor Under Repetitive Avalanche Stress Juraj Marek (Slovak University of Technology in Bratislava, Slovakia) <i>Invited lecture</i>
14:40 15:00	Embedded Rogowski coil for wide bandwidth switch current monitoring Michal Minárik (Slovak University of Technology in Bratislava, Slovakia)
15:00 15:20	Effect of Repetitive Short-Circuit Stress on performance and dynRdson of p-GaN HEMT Jozef Kozárik (Slovak University of Technology in Bratislava, Slovakia)
15:20 15:40	Coffee break

Session: Sensors and microsystems

15:40 16:00	Diamond cantilevers for MEMS sensor applications fabricated by laser ablation and optimized etching technique Johann Zehetner (University of Applied Sciences, Austria)
16:00 16:20	Piezoelectric thin film pressure sensor made by atomic layer deposition of 002-oriented ZnO on Si₃N₄ membrane Gabriel Vanko (Slovak Academy of Sciences, Slovakia)
16:20 16:40	High-quality detectors based on 4H-SiC operated at different temperatures Bohumír Zaťko (Slovak Academy of Sciences, Slovakia)
16:40 17:00	Organic electrochemical transistors for biosensing applications Michal Sobota (Slovak University of Technology in Bratislava, Slovakia)
17:30 22:00	Conference Dinner

ASDAM 2022 14th International Conference on Advanced Semiconductor Devices and Microsystems
 Wednesday 26^h October 2022

Session: IPCEI workshop

9:00	IPCEI workshop introduction
9:20	Josef Moser (Infineon Technologies Austria, Austria)
9:20	The reliability challenge of SiC Power Modules in Automotive Applications
10:00	Michele Calabretta (STMicroelectronics, Italy) <i>Keynote lecture</i>
10:00	Thermally stimulated depolarization current – characterization of a multi-layer dielectric stack for semiconductor packages
10:20	Rainer Schaller (Infineon Technologies Regensburg, Germany)
10:20	Predicting Ion Beam Tuning Success in Semiconductor Manufacturing
10:40	Andreas Laber (Infineon Technologies Austria, Austria)
10:40	Coffee break
11:00	

Session: ECSEL JU project iRel40 workshop

11:00	Reliability along the Value Chain - from Chip to Board/System
11:40	Klaus Pressel (Infineon Technologies Regensburg, Germany) <i>Invited lecture</i>
11:40	A Multi-Channel System for Active Thermal Cycling of Discrete Power Semiconductors Based on Mission Profiles
12:00	Daniel Kostynski (Kompetenzzentrum Automobil- und Industrieelektronik, Austria)
12:00	Low-temperature die attach for power components: Cu-Sn-In solid-liquid interdiffusion bonding
12:20	Vesa Vuorinen (Aalto University, Finland)
12:20	Polymer Coatings for Better Robustness of GaN-based RF Circuits against Corrosion in SiP
12:40	Giuseppe Bellomonte (III-V Lab, France)
12:40	Closing remarks
13:00	
13:00	Lunch
14:00	

Poster session

1	Influence of annealing temperature on emission and capture processes in GaAsN/GaAs heterostructures Peter Benko (Slovak University of Technology in Bratislava, Slovakia)
2	Incremental Capacity Analysis (ICA) Via Galvanostatic Intermittent Titration Technique (GITT) Data for Battery Degradation Study Kemény Martin (Slovak University of Technology in Bratislava, Slovakia)
3	TCAD simulation of improved surge current capability of power diode module with copper metallization Patrik Príbytný (Slovak University of Technology in Bratislava, Slovakia)
4	Simulation Study of Thermo-Mechanical Properties of Power Transistor Embedded in PCB Aleš Chvála (Slovak University of Technology in Bratislava, Slovakia)
5	Impact of different waveguide structures on optical properties of SiN based AWG-spectrometers Dana Seyringer (Vorarlberg University of Applied Sciences, Austria)
6	Electrical properties of Pt/TiO₂/Pt and Pt/TiO₂/TiN structures grown by atomic layer deposition using TTIP and water Matej Horský (Slovak Academy of Sciences, Slovakia)
7	Localization of the near-field enhancement by three-dimensional ring-zone structures Patrik Micek (University of Zilina, Slovakia)
8	3D optical splitters based on polymers Dušan Pudiš (University of Zilina, Slovakia)
9	Optimization of 2x2 optical switch based on MMI splitters by using waveguides tapers Jozef Chovan (Slovak Centre of Scientific & Technical Information, International Laser Centre, Slovakia)
10	Small currents measurement of organic field-effect transistors Vratislav Režo (Slovak University of Technology in Bratislava, Slovakia)
11	Body temperature sensor based on PEDOT:PSS Juraj Nevrela (Slovak University of Technology in Bratislava, Slovakia)
12	Use of Thermally Stressed GaN Semiconductor Structures for Electricity Generation Miroslav Husak (Czech Technical University in Prague, Czech Republic)
13	Micro Power Supply Based on Piezoelectric Effect Miroslav Husak (Czech Technical University in Prague, Czech Republic)

Poster session: Telemedical and smart system and solutions

1	Concept of modern EOG system for BCI Erik Vavrinsky (Slovak University of Technology in Bratislava, Slovakia)
2	Design of equipment for advanced PPG research Kristian Gasperek (Slovak University of Technology in Bratislava, Slovakia)
3	Simultaneous electro / mechano / impedance myographic measurement of muscle activity Erik Vavrinský (Slovak University of Technology in Bratislava, Slovakia)
4	Advanced ECG holter with 2.4 GHz communication Ľuboš Černaj (Slovak University of Technology in Bratislava, Slovakia)
5	Combination of electro / impedance / seismo / phono - cardiography in medicine Erik Vavrinský (Slovak University of Technology in Bratislava, Slovakia)
6	Multifunctional communication gateway for implementation in telemedicine systems Jozef Kozárik (Slovak University of Technology in Bratislava, Slovakia)
7	Biometric identification using chest based PPG sensor Tomas Zavodnik (Slovak University of Technology in Bratislava, Slovakia)
8	Multi-Sensor Modular IoT Platform for High-Density Monitoring of Environmental Parameters Jozef Kozárik (Slovak University of Technology in Bratislava, Slovakia)
9	Compact portable potentiostat for specific applications: development and measurements Jana Donovalova (Powertec, Slovakia)
10	Securing IoT elements in Smart City environments Peter Glemba (Asseco Central Europa, Slovakia)
11	Ontology web language implementation in the strategic level of Archimate language in the context of smart cities , Patrik Břečka (Asseco Central Europa, Slovakia)
12	SWOT Analysis for Object Detection in Traffic Engineering Based on Yolo Implementation – Case Study , Marek Letavay (University of Pardubice, Czech Republic)
13	On Performance Measures During Behaviour Detection Algorithms Implementation – Case Study Javad Mohammadi Rad (University of Pardubice, Czech Republic)