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# CONFERENCE PROGRAM

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**WEDNESDAY, OCTOBER 10**

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**09:00 WELCOME AND OPENING CEREMONY**

**09:15 SESSION ON INTEGRATED CIRCUITS**  
**CHAIRPERSON : L.Trontelj**

**09:15 INVITED PAPER**

**09:15 R.S.Popovic, P.M.Drljaca, C.Schott, R.Racz**  
Integrated Hall Sensor / Flux Concentrator Microsystems

**10:00 COFFEE BREAK**

**10:15 SESSION ON INTEGRATED CIRCUITS**  
**CHAIRPERSON : J.Trontelj**

**10:15 D.Strle**  
System Design Considerations for Low-Power, BP  $\Delta - \Sigma$  A/D  
Converter Used for Rotation Sensor Signal Processing

**10:30 A.Vodopivec**  
Post-Layout Simulation with IRSIM

**10:45 I.Zelinka**  
Methods of Evaluation for Digital Blocks from View of Robustness  
and Power Consumption

**11:00 J.Zarebski, K.Gorecki**  
PWM Controller Dynamic Electrothermal Macromodel for SPICE

**11:15 D.Raič**  
A Modified Version of Semidynamic FLIP-FLOP

**11:30 S.Starašinič**  
Low Current Consumption Divider Chain

**11:45 A.Pleteršek**  
Integrated Reference Circuits – Design and Properties

**12:00 A.Štern**  
Development of an On-Chip Low Power Transmitter Output Stage

## **12:15 LUNCH**

### **14:15 SESSION ON INTEGRATED CIRCUITS**

**CHAIRPERSON : J.Trontelj**

**14:15 M.Verderber, A.Žemva, A.Trost**

Implementation of the DCT-Based Encoder/Decoder in FPGA Devices

**14:30 K.Gorecki, W.J.Stepowicz, J.Zarebski**

Thermal Failures in Electronic Circuits

### **14:45 SESSION ON DEVICE PHYSICS AND MODELLING**

**CHAIRPERSON : S.Amon**

**14:45 Zs.J.Horvath, K.Jarrendahl, L.K.Orlov, M.Serenyi, M.Adam, I.Szabo, B.Cvikl, D.Korošak, E.Pashaev, S.Yakunin, V.V.Tuyen, Zs.Czigany**

Vertical Electrical Properties of Al/SiGe/Si Structures

**15:00 U.Merc, F.Smole, M.Topič**

Resonant Tunneling and Superlattice Structures

**15:15 J.Osvald**

C-V Curves of Schottky Diodes with a Near-Surface  $\delta$ -Doped Layer

**15:30 D.Korošak, B.Cvikl, Zs.J.Horvath**

Microscopic Origin of Excess Capacitance of Non-Ideal Schottky Junctions

**15:45 B.Cvikl, D.Korošak, E.Krištof, M.Koželj**

Possible Manifestation of Wannier-Stark Effect in C-U Data of ICB Deposited Schottky Junctions

**16:00 S.Amon, D.Vrtačnik, D.Resnik, M.Možek, U.Aljančič, M.Cvar**

Low Temperature Response of PTAT Sensors

## **16:15 COFFEE BREAK**

### **16:30 SESSION ON DEVICE PHYSICS AND MODELING**

**CHAIRPERSON : S.Amon**

**16:30 M.Možek, S.Amon, D.Vrtačnik, D.Resnik, U.Aljančič**  
Designing Smart Pressure Sensors

**16:45 U.Aljančič, M.Pavlin, D.Resnik, D.Vrtačnik,**  
**M.Vukadinović, M.Možek, S.Amon**  
Silicon Low-Pressure Sensor Packaging

**17:00 D.Resnik, D.Vrtačnik, U.Aljančič, M.Možek, S.Amon**  
Roughness Control in Micromachining of (311) Crystal Planes in (100) Silicon

**17:15 PRESENTATION OF SEMTO**

**I.Pompe:** Technology Center for Circuits, Components Materials, Technologies and  
Equipment for Electronics

Followed by POSTER PRESENTATION

**19:30 VISIT TO MUSEUM OF ALPINE DAIRY FARMING**

**THURSDAY, OCTOBER 11**

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**09:00 WORKSHOP ON OPTOELECTRONIC DEVICES AND APPLICATIONS**  
**CHAIRPERSON : M.Topič**

**09:00 INVITED PAPER**

**M.Stutzmann**

The Status of GaN-based LEDs and Laser Diodes

**09:45 INVITED PAPER**

**R.E.I.Schropp, B.Stannowski, J.K.Rath**

Hot Wire Deposited Materials for Thin Film Transistors

**10:30 COFFEE BREAK**

**10:45 WORKSHOP ON OPTOELECTRONIC DEVICES AND APPLICATIONS**  
**CHAIRPERSON : M.Topič**

**10:45 INVITED PAPER**

**G.Rosenman, P.Urenski**

Tailoring Ferroelectric Domain Configurations for Nonlinear Optical Devices

**11:30 INVITED PAPER**

**C.Hanke**

High Power Semiconductor Laser Diodes

**12:15 LUNCH**

**14:15 WORKSHOP ON OPTOELECTRONIC DEVICES AND APPLICATIONS**

**CHAIRPERSON : M.Topič**

**14:15 INVITED PAPER**

**H.Stiebig, D.Knipp, H.Wagner**

Color Aliasing Free Detectors

**15:00 INVITED PAPER**

**M.Vidmar**

Optical-fiber Communications : Components and Systems

**15:45 INVITED PAPER**

**G.Bratina, R.Hudej**

Organic Semiconductors as Candidates for Advanced Optoelectronic Devices

**16:30 COFFEE BREAK**

**16:45 WORKSHOP ON OPTOELECTRONIC DEVICES AND APPLICATIONS**

**CHAIRPERSON : F.Smole**

**16:45 B.Vojnović**

Optimal Processing for Measurements of Optoelectronic Pulse  
Signal Parameters

**17:00 E.Klimovsky, J.Rath, R.E.I.Schropp, F.A.Rubinelli**

Modeling Light J-V Characteristic Curves of a-Si:H p-i-n  
Solar Cells with the Defect Pool Model

**17:15 M.Vukadinović, F.Smole, J.Krč, M.Topič**

Tunnelling and Hopping of Charge Carriers in High Electric Fields  
of a-Si:H Tunnel Recombination Junctions

**17:30 J.Krč, M.Zeman, M.Topič, F.Smole**  
Investigation and Modelling of Light Scattering Properties  
of a-Si:H Solar Cells

**17:45 M.Maček**  
On-Chip Photodiodes for Monolithic Optical Position Encoder

**18:00 F.Corsi, G.-F.Dalla Betta, D.De Venuto, G.Fontana, G.U.Pignatell**  
Electro-Optical Characterization of High –Speed Si-PIN Photodiodes

**18:15 M.Jankovec, M.Topič, H.Stiebig, M.Krause, J.Krč, M.Vukadinović, F.Smole**  
Investigation of a-Si:H and a-SiC:H Based Ultraviolet Sensitive Detectors

**18:30 J.Kovač, A.Zalar**  
Preferential Sputtering of GaN Induced by Argon Ion Bombardment

**20:00 CONFERENCE DINNER**

## **FRIDAY, OCTOBER 12**

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**09:00 SESSION ON THICK AND THIN FILMS**  
**CHAIRPERSON : M.Hrovat**

**09:00 M.Horvat, D.Belavič, W.Smetana, H.Homolka, R.Reicher, M.Santo Zarnik**  
Thick Film Resistors on Steel Substrates

**09:15 M.Horvat, D.Belavič, A.Benčan, J.Holc, G.Dražič**  
Characterization of Thick-Film PTC Resistors

**09:30 D.Belavič, M.Pavlin, M.Hrovat**  
Thick-Film Interconnection Technology for High-Density Packaging  
in Sensor Applications

**09:45 D.Belavič, K.P.Friedel, M.Santo Zarnik, M.Hrovat**  
A “Design and Simulate” Approach to Improving the Characteristics  
of Ceramic Pressure Sensors

**10:00 M.Santo Zarnik, S.Maček**  
A Finite –Element Analysis of the Electro-Thermal Characteristics  
of an Over-Current-Protection Thick-Film Hybrid Module

**10:15 M.Klanjšek Gunde, M.Maček, P.Pelicon, B.Zorko, A.Razpet**  
Microstructural Data of PECVD Silicon Nitride Films Obtained  
from IR, RBS and ERDA Analyses

**10:30 D.Vrtačnik, B.Casar, D.Resnik, U.Aljančič, M.Možek, S.Amon**  
Radiation Hardness of Composite Nitride-Oxide Films

**10:45 D.Kek, J.Lappalainen, H.L.Tuller**  
Investigation of Pt/Si/CeO<sub>2</sub>/Pt Thin-Film System by Impedance Spectroscopy

**11:00 M.Mozetič**  
Activation of Polymer Materials with Oxygen Plasma

## **11:15 COFFEE BREAK**

**11:30 SESSION ON CERAMICS, METALS AND COMPOSITES**  
**CHAIRPERSON : S.Bernik**

**11:30 A.Dziedzic**  
Some Remarks about Application of Percolation Theory in  
Microelectronics and Materials Science

**11:45 S.Bernik, Bui Ai**  
The Influence of the Amount of Sb<sub>2</sub>O<sub>3</sub> on the Characteristics  
of ZnO-Bi<sub>2</sub>O<sub>3</sub>-Based Varistor Ceramics Doped with Y<sub>2</sub>O<sub>3</sub>

**12:00 W.Mielcarek, D.Nowak-Wozny, K.Prociow, A.Gubanski**  
Cobalt Dopant Influence on ZnO Varistor Degradation

**12:15 G.Dražič, D.Torkar**  
Asbestos Recognition from TEM-EDXS Spectra Using Artificial  
Neural Networks

**12:30 A.Benčan, G.Dražič, J.Holc, M.Hrovat, M.Kosec**  
X-Ray Powder –Diffraction Analysis and Analytical  
Electron Microscopy of Lanthanum Ruthenates

**12:45 W.Mielcarek, E.Zych, M.Kojdecki**  
Structural Properties of Lu<sub>2</sub>O<sub>3</sub>-Based Phosphors

**13:00 S.Javorič, M.Kosec, B.Malič, M.Mandeljc**  
Structural Characterisation of Pb(Zr,Ti)O<sub>3</sub> Thin Films  
with (La,Sr)CoO<sub>3</sub> Bottom Electrodes

**13:15 CLOSING OF THE CONFERENCE**