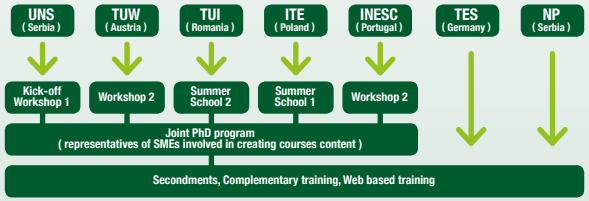
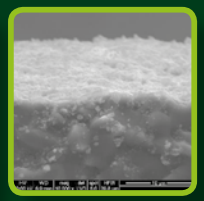
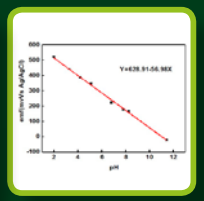
RECRUITED ESRs/ERs

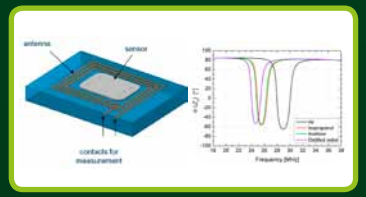
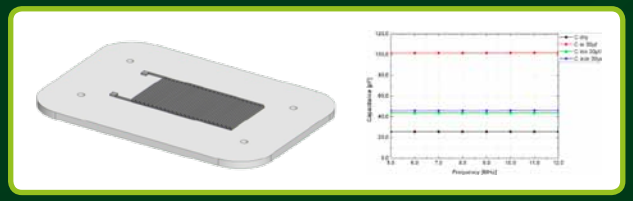
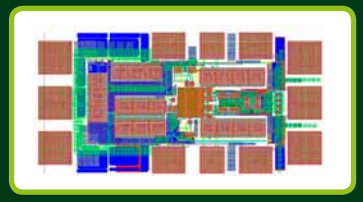
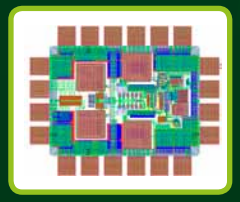
ESR/ER number	Employed fellows	Institution
ESR1	Aleksandar Pajkanović	UNS, Serbia
ESR2	Srđan Ajkalo	UNS, Serbia
ESR3	Akhil Chandran	UNS, Serbia
ESR4	Saša Toškov	TUW, Austria
ESR5	Goran Mišković	TUW, Austria
ESR6	Anatolie Iavorschi	TUI, Romania
ESR7	Nenad Zorić	TUI, Romania
ESR8	Mariana Sireţeanu	TUI, Romania
ESR9	J. F. Blanco Villalba	TUI, Romania
ER1 - ER3	Cornelia Lorenz	TUI, Romania
ESR10	Katarina Cvejin	ITE, Poland
ESR11	Libu Manjakkal	ITE, Poland
ER4	Monika Zawadzka	ITE, Poland
ESR12	Iman Kianpour	INESC, Portugal
ESR13	Bilal Hussain	INESC, Portugal
ESR14	Branislava Milinković	TES, Germany
ESR15	Milenko Milićević	TES, Germany
ESR16	Mitar Simić	NP, Serbia

NETWORK-WIDE TRAINING ACTIVITIES



SCIENTIFIC RESULTS OBTAINED

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senseiver

Low-cost and energy-efficient LTCC sensor/IR-UWB transceiver solutions for sustainable healthy environment

Project Reference: 289481
Start Date: 01/12/2011
Duration: 48 months

Low-cost and energy-efficient LTCC sensor/IR-UWB transceiver solutions for sustainable healthy environment

www.senseiver.com

SENSEIVER environmental dimension of technology

THE MAIN PROJECT RESULTS

Sensing materials preparation

- The crack free sensing SnO_2 layer was obtained by dip-coating method using 2-methoxyethanol and $SnCl_2$
- Ceramic powders with the composition $Ln_{1-x}S_{rx}CoO_{3-\delta}$ and $Ln_{1-x}S_{rx}FeO_{3-\delta}$ (Ln=La, Pr, Nd, Sm, Gd) were synthesized
- Pastes based on RuO_2-TiO_2 and RuO_2-Ta_2O_5 were developed for screen printing of electrodes on alumina
- Polymer material (polypyrrole), free-grown on the substrate material was developed for gas sensors
- Hybrid systems on electro-conductive polymers with CNF and CNT for bioelectrochemical sensors
- These materials were tested as sensing layers for toxic gases (NOx, CO), pH value, sensors of acetone, methanol, toluene, etc.

Sensor fabrication in LTCC

- Interdigital (IDC) fluidic sensor (tested in water and various liquids such as distilled water, isopropanol and acetone)
- Capacitive circular plate fluidic sensor
- Wireless resonant fluidic sensor
- Gas sensors prototypes
- Micro-heaters

IR-UWB system

- UWB low noise amplifier (LNA) was designed
- Schematic level of the LNA topology for the first tape-out was completed
- Elliptical patch antenna that later was extended for flexible substrates, with a bandwidth of 6 GHz (4.8-10.8) for an overall gain of 8 dBi was designed
- Low-pass filter was designed and verified for Impulse Radio Integration and Fire (IRIF)
- Digitally controlled attenuator with four programmable bits has been designed
- Broad band power detector for UWB system has been designed. Frequency range - from 3 GHz up to 10 GHz
- Low pass filter which covers the lower band in UWB systems has been designed

WSN Acquisition system

- Intelligent system for measurement, acquisition and processing data gathered from various commercially available environmental sensors via ZigBee wireless network was developed
- Architecture for a rapid prototyping of test and measurement applications in a networked environment
- Two low-power microcontroller based systems was designed and developed: one for measuring and data acquisition of air relative humidity/temperature and second for complex impedance measuring

PROJECT PARTNERS

Full network partners (beneficiaries) are:

1. University of Novi Sad (UNS),
   Faculty of Technical Sciences (FTS), Serbia
   responsible person: ***Prof. Goran Stojanović***
2. Vienna University of Technology (TUW),
   Institute of Sensor and Actuator Systems,
   Department of Applied Electronic Materials, Austria
   responsible person: ***Dr. Goran Radosavljević***
3. "Gheorghe Asachi" Technical University of Iasi (TUI),
   Romania
   responsible person: Prof. ***Cristina Schreiner***
4. Instytut Technologii Elektronowej (ITE), Poland
   responsible person: ***MSc Krzysztof Zaraska***
5. Instituto de engenharia de sistemas
   e computadores do porto (INESC)
   responsible person: ***Dr. Vitor Manuel Grade Tavares***
6. TES Electronic Solutions GmbH (TES)
   responsible person: ***Đorđe Simić***
7. North Point (NP) Ltd.
   responsible person: ***Dr. Slobodan Gajin***

Associated partners do not recruit any researchers, but provide research and complementary training and secondment opportunities. Three accociated partners are included:

1. Ministry of Education and Science, Serbia;
2. Foundation for promoting advanced research "New Wave Science Mates", Romania;
3. Municipal Waterworks and Sewer Enterprise in Kraków Joint Stock Company, Poland.

WORK PACKAGES

The SENSEIVER work plan is divided into nine coherent work packages:

WP1: Project management and coordination
WP2: Recruitment of researchers
WP3: Sensors design, modeling and simulation
WP4: Development of new materials
WP5: Sensors fabrication and characterization
WP6: IR-UWB Rx and Tx design, characterization and testing
WP7: Data acquisition and processing
WP8: Training and mobility activities
WP9: Dissemination and promotional activities.

OTHER RESULTS

17 Secondments performed
15 Journal papers published
46 Conferance papers presented
12 Network management activities
11 Events organized open to external researchers
4 Media performance / articles

PROMOTIONAL MATERIALS