Programme

Sunday 15 September

19.00 – 22.00 Welcome reception - RIXOS Hotel, Libertas

Monday 16 September

09.00 – 09.15 Welcome – V Bilas, University of Zagreb and G McConnell, University of Strathclyde

09.15 – 10.15 Chair – V Bilas, University of Zagreb, Croatia

(Keynote) Security applications of magnetic sensors
P Ripka, Czech Technical University in Prague, Czech Republic

10.15 – 10.45 Refreshments

Session 1: Optical sensors

Chair – G McConnell, University of Strathclyde, UK

10.45–11.05 Plastic optical fibre sensor for spine bending monitoring
M A Zawawi1,2, S O’Keeffe1 and E Lewis1, 1University of Limerick, Ireland, 2Universiti Malaysia Pahang, Malaysia

11.05–11.25 Integration of leaky waveguide detection with electrowetting on dielectric digital microfluidic devices
R Gupta and N Goddard, University of Manchester, UK

11.25–11.45 Detection and classification of orange peel on polished steel surfaces by interferometric microscopy
M L Miranda-Medina, P Somkuti and B Steiger, AC²T Research GmbH, Austria

11.45-12.05 Stability comparison between two optical refractometer techniques
S A Chowdhury, E Chehura, R Correia, D Francis, J Hodgkinson and R P Tatam, Cranfield University, UK

12.05-12.25 Development of dithizone based fibre optic evanescent wave sensor for heavy metal ion detection in aqueous environments
K Bhavsar, R Prabhu and P Pollard, Robert Gordon University, UK

12.25-12.45 Investigation of finger reflectance photoplethysmography in volunteers undergoing a local sympathetic stimulation
H Njoum and P Kyriacou, City University London, UK

12.45-14.00 Lunch
Session 2: Smart sensors, sensor modelling

Chair - A Tickle, Coventry University, UK

14.00-14.20 Interface electronics for an RF resonance-based displacement sensor
E Asua¹, V Etxebarria¹: A García-Arribas¹, J Feutchwanger¹, J Portilla¹, and J Lucas²
¹Universidad del País Vasco (UPV/EHU), Spain, ²Elytt Energy, Spain

14.20-14.40 Sensor interface for multimodal evaluation of capacitive sensors
T Schlegl and H Zangl, Graz University of Technology, Austria

14.40-15.00 Detection of the short-circuit faults in the stator winding of induction motors based on harmonics of the neighboring magnetic field
V Fireteanu, University of Bucharest, Romania

15.00– 15.20 Empowering smartphone users with sensor node for air quality measurement
D Oletic and V Bilas, University of Zagreb, Croatia

15.20-15.50 Refreshments

15.50-18.00 Poster Session

18.00 Free time for delegates

Tuesday 17 September

09.15-10.15 Chair - G McConnell, University of Strathclyde

(KEYNOTE) New tricks with old sensors: pervasive technologies for novel application
G Merrett, University of Southampton, UK

10.15-10.45 Refreshments

Session 3: Electromagnetic sensors

Chair - V Bilas, University of Zagreb, Croatia

10.45-11.05 Analytical modelling of soil effects on electromagnetic induction sensor for humanitarian demining
D Vasić, D Ambruš and V Bilas
University of Zagreb, Croatia

11.05-11.25 Classification of metallic targets using a single frequency component of the magnetic polarisability tensor
J Makkonen¹,³, L A Marsh², J Vihonen¹, A Visa¹, A Järvi³ and A J Peyton²
¹Tampere University of Technology, Finland, ²University of Manchester, UK, ³Rapiscan Systems Oy, Finland
11.25-11.45 Long range magnetic localization- accuracy and range study
J Vcelák¹, A Zikmund² and J Kral⁰
¹CTU-University Center for Energy Efficient Buildings, Czech Republic, ²CTU-Faculty of Electrical Engineering, Czech Republic

11.45-12.05 Active induction balance method for metal detector sensing head utilizing transmitter-bucking and dual current source
D Ambruš, D Vasić and V Bilas
University of Zagreb, Croatia

12.05-12.25 Evaluation of uncertainty in AC power calculation with asynchronously sampled data
D Lindenthaler and H Zangl
Graz University of Technology, Austria

12.25-12.45 Defect detection of the weld bead based on electromagnetic sensing
B M Abdullah, A Mason and A Al-Shamma'a
Liverpool John Moores University, UK

12.45-14.00 Lunch

Session 4: Magnetic sensors and glacial monitoring
Chair – H Zangl, University of Graz, Austria

14.00-14.20 Magnetic sensing for microstructural assessment of power station steels: Magnetic Barkhausen noise and minor loop measurements
J W Wilson¹, N Karimian¹, W Yin¹, J Liu², CL Davis², and A J Peyton¹
¹University of Manchester, UK, ²University of Birmingham, UK

14.20-14.40 Magnetic sensing for microstructural assessment of power station steels: Differential permeability and magnetic hysteresis
N Karimian¹, J W Wilson¹, W Yin¹, J Liu², CL Davis², and A J Peyton¹
¹University of Manchester, UK ²University of Birmingham, UK

14.40-15.00 Enhancing performance of wireless sensor networks in glacial environments using wake-up receivers
V Jelicic¹, D Cesarini² and V Bilas¹
¹University of Zagreb, Croatia, ²University of Pisa, Italy

15.00-15.20 From single point of measurement to distributed sensing in long-term glacier monitoring
D Cesarini¹ V Jelicic² V Bilas² and M Avenuti¹
¹University of Pisa, Italy, ²University of Zagreb, Croatia

15.20-15.50 Refreshments
Session 5: Sensors for biology and medicine, fluid sensors

Chair – D Vasic, University of Zagreb, Croatia

15.50-16.10 A fluidic cell embedded electromagnetic wave sensor for online indication of neurological impairment during surgical procedures
R T Blakey, A Mason and A I Al-Shamma’a
Liverpool John Moores University, UK

16.10-16.30 Arm and wrist surface potential mapping for wearable ECG rhythm recording devices: a pilot clinical study
W D Lynn¹, O J Escalona², D J McEneaney²
¹University of Ulster, UK, ²Cardiovascular Research Unit, Craigavon Area Hospital, UK

16.30-16.50 Detection of gamma-radiation and heavy metals using electrochemical bacterial-based sensor
M Al-Shanawa¹,², A Nabok¹, A Hashim¹, T Smith¹, S Forder¹
¹Sheffield Hallam University, UK, ²University of Basra, Iraq

16.50-17.10 Drive system alignment calibration of a microgravity drop tower of novel design
J Trunins¹, B P Osborne² and A Augousti¹
¹Kingston University, UK, ²The University of New South Wales, UK

17.10-17.30 Improvements to zirconia thick-film oxygen sensors♣
W C Maskell¹,², D J L Brett² and N P Brandon¹
¹Imperial College London, UK, ²University College London, UK
♣ The work was carried out at Sensox Ltd, a company which subsequently went into liquidation

17.30-17.55 NI measurement systems for any sensors in any applications
A Drozg, National Instruments, Hungary

19.30 Conference dinner at the Klarisa Restaurant in the Old Town – coach will depart outside hotel

Wednesday 18 September

09.15-10.15 Chair - K Ozanyan, University of Manchester, UK

(KEYNOTE) From Hemodynamic towards cardiomechanic sensors in implantable devices
Dr.sc.Bozidar Ferek-Petric, CCDS, MEDTRONIC CRDM Adriatic Region

10.15-10.45 Refreshments
Session 6: General sensors

Chair - A Peyton, University of Manchester

10.45-11.05 Development of device producing electrolyzed water for home care
K Umimoto¹, S Nagata¹, and J Yanagida²
¹Osaka Electro-Communication University, Japan, ²Kobe Tokiwa University, Kobe Japan

11.05-11.25 Real-time microwave sensor for KCl, MnCl₂ and CuCl solutions concentration with Ag patterns printed on flexible substrates
M Ortoneda-Pedrola, O Korostynska, A Mason and A I Al-Shamma’a
Liverpool John Moores University, Liverpool, UK

11.25-11.45 Abilities of Raman sensor to probe pollutants in water
K Ben Mabrouk¹², T H Kauffmann¹² and M D Fontana¹²
¹Université de Lorraine, France, ²Supélec, Laboratoire Matériaux Optiques, France

11.45 – 12.05 Hard-field tomography imaging in secondary contrast
J A Cantoral Ceballos, M P Wood, N Nurgiyatna, M A Banuelos Saucedo, P Wright and K B Ozanyan
University of Manchester, UK

12.05-12.25 Advanced sensors for accurate, broadband AC voltage metrology
T E Lipe, J R Kinard, D B Novotny, and J E Sims
National Institute of Standards and Technology, USA

12.25-12.45 A matched Bow-tie antenna at 433MHz for use in underwater wireless sensor networks
A A Abdou, A Shaw, A Mason, A Al-Shamma’a, J Cullen, S Wylie and M Diallo
Liverpool John Moores University, UK

12.45 Lunch
Poster programme

The main poster session will take place on Monday 16 September, from 15.50 - 18.00. You can mount your posters from 09.00 on Monday. The posters will be on display throughout the duration of the conference. The dimensions of the boards are 1 metre wide and 2 metres high.

P.1 - Real-time sensing of NaCl solution concentration at microwave frequencies using novel Ag patterns printed on flexible substrates
O Korostynska, Liverpool John Moores University, UK

P.2 - A Study on signal group processing of AUTOSAR COM module
T-M Han, ETRI, South Korea

P.3 - Hydrogen sensing using reduced graphene oxide sheets supported by Pd nanoparticles
R Yatskiv, Institute of Photonics and Electronics, Academy of Sciences CR, v.v.i. Czech Republic

P.4 - Rigorous modelling of light's intensity angular-profile in Abbe refractometers with absorbing homogeneous fluids
A Garcia-Valenzuela, UNAM, Mexico

P.5 - Spectral response analysis of PVDF capacitive sensors
A Garcia-Valenzuela, UNAM, Mexico

P.6 - Investigation of the significance of the 'body effect' on sensitivity to metallic objects in a walk-through metal detector
L Marsh, University of Manchester, UK

P.7 - Optical detection of microcystin produced by cyanobacteria
R Al-Ammar, Sheffield Hallam University, UK

P.8 - A novel optical sensor platform designed for wireless sensor networks
S Yang, City University London, UK

P.9 - A Quasi-Monte Carlo solution for the mutual inductance of misaligned circular coils
L Babić, Končar KET, Croatia

P.10 - The use of nanotechnology in the development of a distributed fibre-optic temperature sensor for subsea applications
G McDowell, Glasgow Caledonian University, UK

P.11 - Low frequency noise of anisotropic magnetoresistors in DC and AC-EXCITED metal detectors
M Janosek, Czech Technical University in Prague, Czech Republic

P.12 - Pervasive sensing: addressing the heterogeneity problem
M O’Grady, University College Dublin, Ireland

P.13 - Calibrations of phase and ratio errors of current and voltage channels of energy meter
P Mlejnek, UCEEB CTU, Czech Republic
P.14 - Optical sensor for heat conduction measurement in biological tissue  
C Sánchez-Pérez, CCADET UNAM, Mexico

P.15 - Channel equalization for indoor lighting communications networks  
S Hadjiloucas, University of Reading, UK

P.16 - Smart-phone based electrocardiogram wavelet decomposition and neural network classification  
S Hadjiloucas, University of Reading, UK

P.17 - Emotional recognition from the speech signal for a virtual education agent  
A Tickle, Coventry University, UK

P.18 - Use of an infrared thermometer with laser targeting in morphological scene change detection for fire detection  
A Tickle, Coventry University, UK

P.19 - Wearable sensor network for health monitoring: the case of Parkinson disease  
M T Arredondo, Universidad Politécnica de Madrid, Spain

P.20 - Non-invasive measurement of cholesterol in human blood by impedance technique: an investigation by 3D finite element field modelling  
E Aristovich, City University London, UK

P.21 - Pilot study: Assessing repeatability of the EcoWalk platform resistive pressure sensors to measure plantar pressure during barefoot standing  
M Zequera, Pontifica Universidad Javeriana, Columbia