ISOCS News: March 2012

Editorial

Happy New Year 2012! We welcome a new year full of opportunities for hot research and continuing activities for lifelong training.

The ***ISOCS Short Course on Data Analysis, Robotics and Mobile Applications of Chemical Sensors*** took place 12-17 January 2012 in Kühtai, Austria, with great success. Attendants got training by top researchers in Artificial Olfaction. It was not only slide presentations but also exciting hands-on experience including a robot competition on odor path tracking. You can see the actual videos in our webpage (https://www.olfactionsociety.org/content/robot-competition-kuehtai-3). Additionally, the school provided ample time for interaction among attendants, teachers and also the possibility to enjoy the astonishing Alps landscape and even skiing.

We are pleased to announce the next society event: The ***ISOCS Short Course on Nanotechnologies for Chemical Trace Detection***, will be hosted by the Microsystems and Nanotechnologies for Chemical Analysis Research group headed by Prof. E. Llobet at the Universitat Rovira I Virgili in Tarragona. (Spain). This exciting event will take place 4-7 June 2012 in Tarragona, directly on the Mediterranean coast 90 Km south of Barcelona. Additionally, Tarragona (ancient Roman City of Tarraco) is a UNESCO World Heritage Center due to the Archaeological remnants. We hope to see you there for an exciting course. Registration details will be soon available in the society webpage. Do not miss this opportunity for training.

Even before, in May IMCS takes place in Europe and is in conjunction with Europe's largest sensor fair: the SENSOR+TEST exhibition fair in Nuremberg. It will be an inspiring forum to learn the latest developments by the leading sensor companies worldwide. ISOCS society members are invited to join us there in a General Assembly meeting to debate about the society and its planning of future activities. This meeting is going to take place Tuesday 15:00 22nd May. The exact place will be announced on the website. Please check for updated information.

And finally (in case you have not done it yet!), do not forget to either become a member or renew your society membership for 2012 and continue developing your career, access essential networking opportunities and receive exclusive ISOCS benefits. Learn more about membership on the ISOCS website at https://www.olfactionsociety.org/membership

Join ISOCS today and earn an annual membership until 31st December 2012. There are two categories of membership - full membership and student membership. All members will be able to be a part of this active community and entitled to various benefits. For example, you will be eligible for a discount on all future ISOCS events such as Short Courses, Workshops and the ISOEN symposium series. You will also have access to past proceedings of many of these events.

Santiago Marco ISOCS President, February 2012

Subscription Fees for 2012

The fees are €95 for membership and €25 for student membership.

Institutional membership is 295€ and includes up to 3 full members and up to 6 student members from one institution.

The membership fee is yearly and expires at the end of the year unless renewed.

Recent ISOCS Events

ISOCS Short Course Winter 2012, 12-17 January 2012, Kühtai, Austria on *"Data Analysis, Robotics and Mobile Applications of Chemical Sensors"*

The Short Course Winter 2012 took place at the Sporthotel Kühtai located in the highest ski resort of Austria, about 30km west of Innsbruck. The special focus of the course was robotics and mobile applications and attracted participants from robotics as well as chemical sensing and electronic nose research. The 22 participants came from Malaysia, Israel, Turkey, Spain, Sweden, France, Italy, UK and Germany.

Lectures were given by Prof. Julian Gardner, Prof. Antonio Pardo, Prof. Andreas Kroll, Dr. Marco Trincavelli, and Dr. Jan Mitrovics. Practical sessions included data analysis, demonstrations of robots and remote sensing as well as a robot competition that involved programming a robot to follow an odour trail.

Perfect weather and snow conditions allowed for some nice skiing during the afternoon. Just outside the Hotel the freestyle ski and snowboard competitions of the Youth Olympic Winter Games 2012 could be visited. Many practical sessions involved working in small groups and everybody showed very high enthusiasm in the preparations for the robot competition, working far beyond midnight.

In the survey all participants gave very high rates to the lectures, courses and the excellent location.

All in all it was a very nice event with new insights and experiences and a very nice group of people that really enjoyed the time together.

Pictures and videos from the event can be viewed at the ISOCS website. ISOCS members may also download the presentations of all lectures.

https://www.olfactionsociety.org/wintercourse2012

Upcoming ISOCS Events

ISOCS Short Course Summer 2012

Science and Technology Campus, University Rovira i Virgili, 4th-7th June 2012, Tarragona, Spain

NANOMATERIALS AND NANOTECHNOLOGY FOR TRACE LEVEL DETECTION

The School will cover topics including:

- Overview of trace detection including applications
- Pre-concentration and sample handling
- Practical demonstration of trace level detection
- Basics of ion mobility spectrometers, Miniaturised IMS. Challenges and results.
- Nanomaterials and their integration in functional devices
- MEMS based technologies
- Signal Processing for trace level detection

Confirmed Lecturers:

- Prof. Julian W. Gardner, University of Warwick (Coventry, UK)
- Prof. Eduard Llobet, University Rovira I Virgili (Tarragona, Spain)
- Prof. Santiago Marco, University of Barcelona (Barcelona, Spain)
- Dr. Wolfgang Vautz, Leibniz-Institut für Analytische Wissenschaften - ISAS (Dortmund, Germany)
- Dr. Karine BONNOT, Nanomatériaux pour Systèmes Sous Sollicitations Extrêmes, ISL (Saint Louis, France)

Who should attend?

The School is ideal for anyone with an interest in nanotech sensors and in trace level detection and is new to the field; for example, PhD students, researchers, technologists and industrialists.

The School will cover basic concepts of nanomaterials and Microsystems technologies for a successful integration in functional devices. It will also review ion mobility spectrometry, optical methods and advanced signal processing for trace level detection.
A minimum number of registrations are required for the school to be held.

Registration fees:

Early Bird Registration (before April the 27th 2012):

General: 450 €

ISOCS Member: 350 €

Regular registration (until May the 31st)

General: 600 €

ISOCS Member: 500 €

Registration fees include:

- Materials of the Summer School
- Coffee breaks and lunches during the whole duration of the School
- Accommodation and breakfast at the University Residence on a shared-room basis (a limited number of individual rooms are available for an extra cost of 150€).
- Welcome reception in June the 4th

The full programme of the school will be announced soon.

ISOCS Steering Committee meeting & General Assembly, 22 May 2012, Nuremberg, Germany

With the occasion of the IMCS-2012 in Nuremberg, ISOCS steering committee and the ISOCS General Assembly will meet at 15:00 on Tuesday 22nd May 2012. The exact time and place will be announced on the ISOCS website.

Selected Events

Pittcon 2012: Orlando Florida, 11-15 March 2012

Several special topics sessions on non-invasive clinical diagnostics occurred at Pittcon. The first session "Non-Invasive Biomedical Analysis" was organized by Dr. Joachim Pleil (US EPA) and Dr. Wolfram Miekisch (University of Rostock) and focused on many contemporary issues the field is focused on, especially relating to breath- and urine-based biomarker discovery and measurement issues. A companion conferee networking session "Non Invasive Biomedical Analysis - The Fast, the Furious, and the Brave - Innovative Analytical Instrumentation for Breath Gas Testing" accompanied this platform session. This second panel allowed all attendees a chance to exchange ideas in an open format to discuss recent progress, remaining hurdles in the field, next steps as this area of research progresses forward. Dr. Janusz Pawliszyn (University of Waterloo) organized a second platform oral session entitled "Breath Analysis as a Non-invasive Alternative for Medical Diagnostics." Speakers included Dr. Raed Dweik (Cleveland Clinic), Dr. Anton Amann (Austrian Academy of Sciences), Dr. Terence Risby (Johns Hopkins University), Dr. Joachim Pleil (US EPA) and Dr. Heather Lord (University of Waterloo). Together they gave an exciting overview of the field of breath analysis, including identifying issues likely to attract additional research in future years.

Conference webpage: www.pittcon.org

IMCS 2012-The 14th International Meeting on Chemical Sensors, May 20-23, Nuremberg, Germany.

The 14th International Meeting on Chemical Sensors is the world's largest interdisciplinary forum on all aspects of chemical sensors encompassing physics, chemistry, materials science and engineering disciplines including biomedical engineering. IMCS-2012 is held together with the world's largest sensor fair, the SENSOR+TEST. IMCS-2012 is organized by the University of Bayreuth and Supported by AMA: Association for Sensor Technology.

Important dates:

Conference website: http://www.imcs2012.de/

SENSOR+TEST - The Measurement Fair, 22-24 May 2012, Nuremberg, Germany

The SENSOR+TEST trade fair is the leading forum for sensor, measuring and testing technologies worldwide. The 2011 trade fair with its 577 exhibitors from 28 nations imposingly presented the entire spectrum of measuring and testing system expertise from sensors to computers - and the signs for SENSOR+TEST 2011 indicate growth.

In 2012, the world´s largest sensor fair and the world´s largest Conference on Chemical Sensors are held jointly - providing an event of huge synergy.

Meet Executives of ISOCS at booth 12-301 and get free tickets to the event from JLM Innovation at http://www.jlm-innovation.de.

Exhibition webpage: http://www.sensor-test.de/

Biosensors 2012: 22nd Anniversary World Congress on Biosensors, 15-18 May 2012, Cancún, México

Biosensors 2012 is a three-day event, organized by Elsevier in association with Biosensors & Bioelectronics, consisting of daily plenary presentations followed by parallel sessions comprising a rigorously refereed selection of submitted papers. In addition to invited lectures, selected oral contributions will be included as extended plenary presentations.

Conference Webpage: http://www.biosensors-congress.elsevier.com

XVI International Symposium on Olfaction and Taste (ISOT), Stockholm , Sweden, 23-27 June 2012

The International Symposium on Olfaction and Taste (ISOT) brings together scientists working on chemosensory sciences from all over the world. It has convened every 3-4 years since its inaugural meeting in Stockholm 1962. The meeting rotates locations between Europe, the United States and Japan reflecting the co-operation of the three large regional societies for investigators of the chemical senses; the European ECRO, the American AChemS, and the Japanese JASTS. The 16th ISOT will be held in Stockholm, Sweden, June 23-27, 2012 under the umbrella of ECRO and in combination with the XXII meeting of ECRO. Participants from all over the world typically make ISOT a very lively forum and an excellent arena for collecting and dispersing information in the area. (For the Organizing Committee Bill S Hansson)

Conference Webpage: http://www.isotxvi.com/

XIII Chemometrics in Analytical Chemistry, 25-29 June 2012, Budapest, Hungary

Chemometrics is the science of extracting information from chemical systems by data-driven means to address problems in chemistry, medicine, biology, chemical engineering, etc. Chemometric techniques are particularly heavily used in analytical chemistry and metabolomics.

Conference Webpage: http://www.cac2012.mke.org.hu/

2012 IEEE International Conference on Computational Intelligence for Measurement Systems and Applications (CIMSA), 2 – 4 July 2012, Tianjin, China

Intelligent Measurement Systems today can be found in any discipline and sector: process monitoring and control, environmental surveillance, biomedical engineering. Increased robustness and flexibility can be obtained by the use of computational intelligence technologies like neural networks, fuzzy inference systems and evolutionary algorithms.

Abstract submission deadline: 15 March 2012.

Conference webpage: http://cimsa2012.ieee-ims.org/

21st International Conference on Ion Mobility Spectrometry, 22-27 July 2012. Orlando, FL, USA

Ion Mobility Spectrometers traditionally used in defense and security applications are extending their range of applications to biomedicine, environment, food, and can be considered today as a hot technology for artificial olfaction applications.

Conference Webpage: http://www.isims.info/isims-2012.html

Eurosensors XXVI, 9-12 September 2012, Wroclaw-Krakow, Poland

Eurosensors is the European leading conference on Sensors and Transducers

Conference webpage: http://www.eurosensors2012.eu

IEEE Sensors 2012: 28-31 October 2012, Taipei, Taiwan

IEEE SENSORS 2012 is intended to provide a forum for research scientists, engineers, and practitioners throughout the world to present their latest research findings, ideas, and applications in the area of sensors and sensing technology. **IEEE SENSORS 2012** will include keynote addresses and invited presentations by eminent scientists. The Conference solicits original state-of-the-art contributions as well as review papers.

Conference webpage: **http://ieee-sensors2012.org**

IABR Breath Analysis: Sensors, Applications and Methodologies (March 2013)

Dr. Michael Epton (University of Otago) and Dr. Cristina Davis (University of California, Davis) are in the process of tentatively organizing another meeting tentatively titled " Breath Analysis: Sensors, Applications and Methodologies" for March 2013. The meeting details will be announced in the upcoming months, and this meeting is intended to be a follow-up on the very successful meeting in Barga, Italy (October 2010). Those researchers interested in the conference may email the organizers for more information (Michael.Epton@cdhb.govt.nz,cedavis@ucdavis.edu).

Future Special Issues

IEEE Sensors Journal: Special Issue on Machine Olfaction

The year 2012 is the tenth anniversary of the original special issue on machine olfaction at the IEEE Sensors Journal. During this time, the field has grown in a number of promising directions, including spectroscopic and olfactory receptor-based sensing, computational models of olfactory processing, and mobile and distributed sensing. The special issue provides a timely update on advances during the past decade (as well as a vantage point from which to evaluate the last 30 years) in the field and, more importantly, the challenges that still lie ahead.
Tentative publication date: 1st June 2012

Guest Editors: J.W. Gardner, K.C. Persaud, P. Gouma, R. Gutierrez-Osuna.

Sensors Journal, MDPI Basel: Special Issue on Odor Detection: Electronic Nose, Olfactometer, and Advanced Instrumentation

The monitoring of odorants is often considered a crucial element in the assessment of indoor and outdoor air quality. This is because many odorants exert adverse impacts on human health and comfort, while some can also participate in the formation of photochemical smog. Considering their socio-economic impact, a number of odorants have recently been designated as criteria offensive odorants in many countries. Both qualitative and quantitative detection of odorous pollutants in all environmental matrices (e.g., air, water, and soil) has always been a challenge because of their highly reactive nature and presence in complex matrices at a wide concentration range. More efforts are thus needed to improve our application of sensing techniques to the detection and accurate evaluation of various odorants. This special issue aims to present articles emphasizing more than one of all the available tools to detect odor phenomena or individual odorants: (1) sampling techniques for odor (and odorants), (2) olfactometric approach, (3) electronic nose, (4) other sensing tools and techniques, and (5) advanced instrumentation (e.g., combination of thermal desorption with GC-MS or MS-MS, GC-GC, etc).

Guest Editor: Ki-Hyun Kim : Deadline 31 August 2012

Recent Special Issues:

Frontiers on Neuroengineering: Special Topic on Bioinspired solutions to the challenges of chemical sensing (editors: R. Huerta (UCSD), T. Nowotny (University of Sussex).

Original Research Article, Published on 25 Oct 2011

Detailed Characterization of Local Field Potential Oscillations and Their Relationship to Spike Timing in the Antennal Lobe of the Moth Manduca sexta

Kevin C. Daly, Roberto F. Galán, Oakland J. Peters and Erich M. Staudacher

doi: 10.3389/fneng.2011.00012

Original Research Article

Olfactory sensor processing in neural networks: lessons from modeling the fruit fly antennal lobe

J. Henning Proske, Marco Wittmann and C. Giovanni Galizia

doi: 10.3389/fneng.2012.00002

Original Research Article, Published on 28 Dec 2011

Parallel Representation of Stimulus Identity and Intensity in a Dual Pathway Model Inspired by the Olfactory System of the Honeybee

Michael Schmuker, Nobuhiro Yamagata, Martin Paul Nawrot and Randolf Menzel

doi: 10.3389/fneng.2011.00017

Original Research Article, Published on 20 Dec 2011

An Investigation on the Role of Spike Latency in an Artificial Olfactory System

Eugenio Martinelli, Davide Polese, Francesca Dini, Roberto Paolesse, Daniel Filippini,Ingemar Lundström and Corrado Di Natale

doi: 10.3389/fneng.2011.00016

Original Research Article, Published on 02 Feb 2012

Characterization of a clinical olfactory test with an artificial nose

David J. Yáñez, Adolfo Toledano, Eduardo Serrano, Ana M. Martín de Rosales, Francisco B. Rodríguez and Pablo Varona

doi: 10.3389/fneng.2012.00001

Original Research Article, Published on 03 Jan 2012

Glomerular Latency Coding in Artificial Olfaction

Jaber Al Yamani, Farid Boussaid, Amine Bermak and Dominique Martinez

doi: 10.3389/fneng.2011.00018

Hypothesis & Theory Article, Published on 05 Jan 2012

Sequential mechanisms underlying concentration invariance in biological olfaction

Thomas A Cleland, Szu-Yu Tina Chen, Katarzyna Wanda Hozer, Hope Nkechinyelu Ukatu,Kevin Junmun Wong and Fangfei Zheng

doi: 10.3389/fneng.2011.00021

Original Research Article, Published on 12 Jan 2012

Mobile Robots for Localizing Gas Emission Sources on Landfill Sites: Is Bio-Inspiration the Way to Go?

Victor Hernandez Bennetts, Achim J. Lilienthal, Patrick P. Neumann and Marco Trincavelli

doi: 10.3389/fneng.2011.00020

Review Article, Published on 04 Jan 2012

Sensor Selection and Chemo-Sensory Optimization: Toward an Adaptable Chemo-Sensory System

Alexander Vergara and Eduard Llobet

doi: 10.3389/fneng.2011.00019

Frontiers on Systems Neuroscience: Special Topic on Chemosensory Learning and Memory (editors: M. Gallo (University of Granada), E. Rolls (University of Oxford))

Mini Review Article, Published on 05 Sep 2011

Brain Mechanisms of Flavor Learning

Takashi Yamamoto and Kayoko Ueji

doi: 10.3389/fnsys.2011.00076

Mini Review Article, Published on 08 Nov 2011

Taste Learning and Memory: A Window on the Study of Brain Aging

Fernando Gámiz and Milagros Gallo

doi: 10.3389/fnsys.2011.00091

Review Article, Published on 26 Sep 2011

Post-Learning Molecular Reactivation Underlies Taste Memory Consolidation

Kioko Guzmán-Ramos and Federico Bermúdez-Rattoni

doi: 10.3389/fnsys.2011.00079

Hypothesis & Theory Article, Published on 23 Nov 2011

Learning through the taste system

Thomas R. Scott

doi: 10.3389/fnsys.2011.00087

ISOCS International Society for Olfaction and Chemical Sensing

Original Research Article, Published on 01 Dec 2011

Genetically Induced Cholinergic Hyper-Innervation Enhances Taste Learning

Selin Neseliler, Darshana Narayanan, Yaihara Fortis-Santiago, Donald B. Katz and Susan J. Birren

doi: 10.3389/fnsys.2011.00097

Review Article, Published on 08 Dec 2011

Behavioral and Neurophysiological Study of Olfactory Perception and Learning in Honeybees

Jean Christophe Sandoz

doi: 10.3389/fnsys.2011.00098

Review Article, Published on 16 Sep 2011

Chemosensory Learning in the Cortex

Edmund T. Rolls

doi: 10.3389/fnsys.2011.00078

Original Research Article, Published on 11 Oct 2011

*Map Formation in the Olfactory Bulb by Axon Guidance of Olfactory Neuro*ns

Benjamin Auffarth, Bernhard Kaplan and Anders Lansner

doi: 10.3389/fnsys.2011.00084

Mini Review Article, Published on 29 Nov 2011

Sweet taste signaling and the formation of memories of energy sources

Ivan E. de Araujo

doi: 10.3389/fnsys.2011.00099

Original Research Article

The insular cortex controls food preferences independently of taste receptor signaling

Albino J Oliveira-Maia, Ivan E De Araujo, Clara Monteiro, Virginia Workman, Vasco Galhardoand Miguel A.L Nicolelis

doi: 10.3389/fnsys.2012.0000

Selected Publications Highlights

Sensors and Actuators B

Gas sensors based on anodic tungsten oxide

20 April 2011

Jarmo Kukkola | Jani Mäklin | Niina Halonen | Teemu Kyllönen | Géza Tóth | Maria Szabó | Andrey Shchukarev | Jyri-Pekka Mikkola | Heli Jantunen | Krisztián Kordás

Carbon dioxide gas sensor using a graphene sheet

20 September 2011

Hyeun Joong Yoon | Do Han Jun | Jin Ho Yang | Zhixian Zhou | Sang Sik Yang | Mark Ming-Cheng Cheng

Novel e-nose for the discrimination of volatile organic biomarkers with an array of carbon nanotubes (CNT) conductive polymer nanocomposites (CPC) sensors

28 November 2011

M. Castro | B. Kumar | J.F. Feller | Z. Haddi | A. Amari | B. Bouchikhi

Vertically aligned ZnO nanorods and graphene hybrid architectures for high-sensitive flexible gas sensors

5 July 2011Jaeseok Yi | Jung Min Lee | Won Il Park

Semiconducting metal oxides as sensors for environmentally hazardous gases

15 December 2011

K. Wetchakun | T. Samerjai | N. Tamaekong | C. Liewhiran | C. Siriwong | V. Kruefu | A. Wisitsoraat | A. Tuantranont | S. Phanichphant

Humidity sensors based on ZnO/TiO2 core/shell nanorod arrays with enhanced sensitivity

28 November 2011

Leilei Gu | Kaibo Zheng | Ying Zhou | Juan Li | Xiaoliang Mo | Greta R. Patzke | Guorong Chen

Hydrogen sensors – A review

20 October 2011T. Hübert | L. Boon-Brett | G. Black | U. Banach

Micro-lotus constructed by Fe-doped ZnO hierarchically porous nanosheets: Preparation, characterization and gas sensing property

15 November 2011Ang Yu | Jieshu Qian | Hao Pan | Yuming Cui | Meigui Xu | Luo Tu | Qingli Chai | Xingfu Zhou

Sensors mdpi Basel

Hua Bai and Gaoquan Shi

Gas Sensors Based on Conducting Polymers

Sensors 2007, 7(3), 267-307; doi:10.3390/s7030267

Available online: http://www.mdpi.com/1424-8220/7/3/267

IEEE Sensor Journal

Graphene Sensors
Hill, E.W. Vijayaragahvan, A. Novoselov, K.
Page(s): 3161-3170
Digital Object Identifier : 10.1109/JSEN.2011.2167608

CMOS Interfacing for Integrated Gas Sensors: A Review
Gardner,J.W. Guha,P.K. Udrea,F. Covington,J.A.
Page(s): 1833-1848
Digital Object Identifier : 10.1109/JSEN.2010.2046409

Chemical Senses

T. Hummel, B. Sekinger, S.R. Wolf, E. Pauli, and G. Kobal, '*Sniffin' Sticks': Olfactory Performance Assessed by the Combined Testing of Odor Identification, Odor Discrimination and Olfactory Threshold***,** Chem. Senses (1997) 22(1): 39-52 doi:10.1093/chemse/22.1.39

Barry G. Green, Pamela Dalton, Beverly Cowart, Greg Shaffer,Krystyna Rankin, and Jennifer Higgins, *Evaluating the 'Labeled Magnitude Scale' for Measuring Sensations of Taste and Smell* Chem. Senses (1996) 21(3): 323-334 doi:10.1093/chemse/21.3.323

David V. Smith and Joseph B. Travers, *A metric for the breadth of tuning of gustatory neurons* Chem. Senses (1979) 4(3): 215-229 doi:10.1093/chemse/4.3.215

Alexander A. Bachmanov, Xia Li, Danielle R. Reed,Jeffery D. Ohmen, Shanru Li, Zhenyu Chen, Michael G. Tordoff,Pieter J. de Jong, Chenyan Wu, David B. West, Alu Chatterjee, David A. Ross, and Gary K. Beauchamp, *Positional Cloning of the Mouse Saccharin Preference (Sac) Locus* Chem. Senses (2001) 26(7): 925-933 doi:10.1093/chemse/26.7.925

Lewis B. Haberly*, Parallel-distributed Processing in Olfactory Cortex: New Insights from Morphological and Physiological Analysis of Neuronal Circuitry* Chem. Senses (2001) 26(5): 551-576 doi:10.1093/chemse/26.5.551

Books

Neuromorphic Olfaction (Ed. K.C. Persaud, S. Marco, A. Gutierrez-Galvez), Taylor and Francis

Series Frontiers in Neuroengineering. To Be Published September 15th 2012 by CRC Press – 352 pages

Contents:

- Engineering aspects of olfaction, Krishna Persaud
- Study of the coding efficiency of populations of olfactory receptor neurons, A. Gutierrez-Galvez, S. Marco
- Mimicking biological olfaction with very large chemical arrays, R. Beccherelli, E. Zampetti, S. Pamtalei, M. Bernabei and K. C. Persaud
- The Synthetic Moth: A Novel Neuromorphic Approach towards Artificial Olfaction in Robots,Sergei Bermudez
- Infotactic robot navigation reveals biomimetic odor-guided trajectories, Eduardo Martin Moraud and Dominique Martinez
- A computational model of the mammalian early olfactory system, Simon Benjaminsson, Pawel Herman and Anders Lansner
- Temporal coding and integrative biology of the neural mechanisms which code for olfactory information, Tim Pearce

Special discount on purchases from JLM Innovation for ISOCS members

JLM Innovation GmbH offers a special 15% discount to all ISOCS members for purchase orders received before 30.04.2011 on following products:

MultiSens Standard: Integrated data acquisition and data analysis software for multi sensor systems.

MultiSens Analyzer (Basic, Standard or Professional): Data analysis software for multi sensor data.

CAPmeter: USB interface for capacitive sensors

JLMQ: USB interface for 4 QMB sensors

FQ4: 4 channel USB interface for frequency measurement up to 500MHz

For more information on these products please visit www.jlm-innovation.de

Please mention your ISOCS membership when ordering.

Job offerings

PhD thesis in the field of Nanocalorimetry

JobType: Full Time

Required Education Level: Master's Degree or equiv.

Organisation / Company: Institut de Sciences des Matériaux de Mulhouse (IS2M)

Country: France

City: Mulhouse

The PhD student will take part in a collaboration project between two CNRS claboratories: Institut de Sciences des Matériaux de Mulhouse (IS2M) and the French-German Institute at Saint-Louis (ISL). The main focus of this collaboration is on detection of explosive materials using a novel technique of Nanocalorimetry.

The Nanocalorimetry is a modern alternative of the classical thermal analysis techniques such as Differential Scanning Calorimetry. The advantage of the Nanocalorimetry is that it can handle samples, which are in the nano- and pico-gram range. The possibility of using so small amounts of material is provided by the special design of the new calorimetric sensor, which allows performing heating or cooling ramps at rates up to one million degrees per second. The candidate will participate in the development of the Nanocalorimetry technique and its applications for studies of explosive materials and polymers.

Basic knowledge in thermal properties of materials is welcome.

Contact: Dimitri Ivanov, Email: dimitri.ivanov@uha.fr

Phd Thesis, Path Planning Strategies for Gas Sensitive Mobile Robots

JobType: PhD Studentship

Required Education Level: Master's Degree or equiv.

Organisation / Company: Örebro University

Department: AASS Research Centre - Mobile Robotics and Olfaction Lab

Country: Sweden

City: Örebro

One fully funded Ph.D. student position (3 years) in Mobile Robotics Olfaction is immediately available at the AASS Mobile Robotics and Olfaction Lab, University of Örebro, Sweden.

Ph.D. Position

The Ph.D. project is dedicated to research in the area of mobile robot olfaction, an area in which the AASS MR&O lab at Örebro University is one of the leading research groups world-wide. Mobile robot olfaction is concerned with different aspects of airborne chemical sensing with mobile robots in unconstrained environments and also relates to networks of stationary gas sensors. The enrolled Ph.D. student will focus his/her research activity on designing path planning strategies to address mobile robotics olfaction tasks (e.g., gas source localization, and gas distribution mapping). Targeted milestones of this Ph.D. project are: (1) The development of a robotic simulation module that will enable not only the simulation of the robot behaviour, but also of the dispersion of gases in natural environments; (2) the design of path planning algorithms to drive the robot to optimal positions for the collection of relevant gas distribution data; (3) validation of the proposed algorithms both in simulation and on the field, with a mobile robot.

Prerequisites

In addition to a strong interest in the topic, a solid theoretical background and excellent programming skills, applicants should also have the equivalent of a Master's degree in a relevant field (e.g., Physics, Applied Mathematics, Robotics, Computer Science, etc). Experience in Robotics, AI Planning and/or Classical Mechanics is a plus. Proficiency in written/spoken English is mandatory.

Application

To apply for the position, please send a motivation letter along with an updated CV (including at least two academic references) by e mail to Assoc. Prof. Achim J. Lilienthal (achim.lilienthal@oru.se). Applications can be sent immediately and will be considered until the position is fixed.

Environment

The Ph.D. student will join the AASS Mobile Robot and Olfaction lab (see http://aass.oru.se/Research/mro/), one of the two research groups at the AASS (Applied Autonomous Sensor Systems) research unit (http://www.oru.se/aass). The research and human environment at AASS is young and enthusiastic, and Ph.D. students come from different countries and have different scientific and cultural backgrounds (currently there are 26 Ph.D. students from 13 different countries). AASS often hosts international researchers, and is involved in several international projects, thus providing Ph.D. students with opportunities to travel and cooperate with people in other countries.

Contact: Assoc. Prof. Achim J. Lilienthal (achim.lilienthal@oru.se).

Closing date: Applications can be sent immediately and will be considered until the position is filled.

Website:

http://aass.oru.se/Research/Learning/positions.html

Future contents ISOCS Newsletter

Contributions to the ISOCS Newsletter are welcomed. We envision the following sections:

- Carreer opportunitties (PhD, Postdocs, Professional or Academic positions…)
- Annoucement of new products
- Short Reports on R+D Finalized Projects
- PhD thesis dissertations
- Book reviews
- Journal papers highlights
- Conferences

Please send your contributions to Santiago.marco@ub.edu. Contributions should not exceed 10 lines.