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SEB'09 Chair's Welcome Message

We are very pleased to extend to all delegates and speakers a warm welcome to the First International Conference on Sustainability in Energy and Buildings, SEB'09, held in the City of Brighton and Hove in the United Kingdom, hosted by the University of Brighton, and organised by KES International.

KES International is a knowledge transfer organisation providing high-quality conference events and publishing opportunities for researchers. The KES association is a community consisting of several thousand research scientists and engineers who participate in KES activities.

For over a decade KES has been a leader in the area of Knowledge Based and Intelligent information and Engineering Systems. Now KES is starting to make a contribution in the area of Sustainability and Renewable Energy with this first conference specifically on renewable energy and its application to domestic and other buildings. Sustainability in energy and buildings is a topic of increasing interest and importance on the world agenda. We therefore hope and intend that this first SEB event may grow and evolve into a conference series.

KES International is a member of the World Renewable Energy Congress / Network which is Chaired by Professor Ali Sayigh. We are grateful to Professor Sayigh for the collaboration and assistance of WREC/N in the organisation of SEB'09. We hope to continue to work with WREC/N in the future on projects of common interest.

Thanks are due to the very many people who have given their time and goodwill freely to make the SEB'09 a success.

We would like to thank the Dean of the Faculty of Science and Engineering, Professor Andrew Lloyd, and the Mayor of Brighton and Hove, Councillor Garry Peltzer Dunn for opening the conference. We would like to thank the members of the International Programme Committee who were essential in providing their reviews of the papers. We are very grateful for this service, which enabled us to ensure high quality papers. We thank the high-profile keynote speakers for providing interesting talks to inform delegates and provoke discussion. Important contributors to SEB'09 were made by the authors, presenters and delegates without whom the conference could not have taken place, so we offer them our thanks. The KES Secretariat staff worked hard to bring the conference to a high level of organisation, and we thank them. Finally we thank the staff of the Holiday Inn, and the people of Brighton and Hove for welcoming the conference.

We hope that you will find SEB'09 an interesting, informative and enjoyable experience. We welcome you to the KES community and hope to see you at a future KES event.

Bob Howlett

**SEB'09 General Chair
KES International Executive Chair**

SEB'09 Organisation

Conference General Chair

Dr Robert J. Howlett

Centre for SMART Systems, University of Brighton, UK &
Executive Chair, KES International

Honorary Chair (Intelligent Systems)

Professor Lakhmi C. Jain

University of South Australia &
Visiting Professor, University of Brighton

Honorary Chair (Renewable Energy)

Professor Ali Sayigh

Chairman of World Renewable Energy Congress
Director General of WREC/N

Honorary Chair (Built Environment)

Professor Andrew Miller

Centre for Sustainability in the Built Environment, University of Brighton

Asia (excluding China) Liaison Chair

Professor Vivek Agarwal

Indian Institute of Technology Bombay, India

Australia & New Zealand Liaison Chair

Professor Bogdan Z. Dlugogorski

Director, Research Centre for Energy
The University of Newcastle, Australia

China Liaison Chair

Professor Hong Jin

Director of Green Building Research Institute
Director of Architectural Technology Department
Harbin Institute of Technology, Peoples Republic of China

Local Arrangements Chair

Mr Shaun Lee

Centre for Smart Systems, University of Brighton, UK

KES International

The organisation and operation of SEB'09 is the responsibility of the KES International organisation

Executive Chair: Dr Robert J. Howlett, University of Brighton

Founder: Professor Lakhmi Jain, University of South Australia

Operations Manager: Mr Peter Cushion

On-site Registration Assistant: Ms Anna Howlett

SEB'09 International Programme Committee

Prof. Moulay-Ahmed Abdelghani-Idrissi University of Rouen, France
Prof. Vivek Agarwal Indian Inst. of Technology Bombay, India
Prof. Abdel Aitouche HEI Grande Ecole, Lille, France
Prof. A.S.Bahaj University of Southampton, UK
Prof. Frede Blaabjerg Aalborg University Inst. of Energy Technology, Denmark
Mr Tony Book Riomay Ltd, UK
Prof. Chris Chao Hong Kong University of Science and Technology, China
Dr Tim Cockerill Imperial College London, UK
Prof. Emilio Corchado University of Burgos, Spain
Prof. Juan Manuel Corchado University of Salamanca, Spain
Prof. Derek Clements-Croome University of Reading, UK
Dr. Gouri Datta University of Delhi, India
Prof. He Dexin President, Chinese Wind Society, China
Prof Bogdan Dlugogorski University of Newcastle, Australia
Prof. Prasad Enjeti Texas A&M University, Qatar
Luis A. Fajardo-Ruano Universidad Michoacana of San Nicolás of Hidalgo, Mexico
Prof Ahmed Hajjaji University of Picardie Jules Verne, France
Prof. Jishan He Chinese Academy of Engineering, China
Prof. Sture Holmberg Royal Institute of Technology, Stockholm, Sweden
Dr. Robert Howlett KES International & University of Brighton, UK
Dr. Sam C.M.Hui University of Hong Kong, China
Dr Kenneth Ip University of Brighton, UK
Prof. Lakhmi C. Jain University of South Australia, Australia
Prof. Hong Jin Harbin Institute of Technology, Heilongjiang, China
Prof. Eric Kennedy University of Newcastle, Australia
Prof. D. P. Kothari Vice Chancellor, Vellore Institute of Technology University, India
Dr Sumathy Krishnan North Dakota State University, USA
Prof. Anjui Li Xi'an University of Architecture & Technology, China
Prof. Shaohua Liu Vice-president of Northeast Dianli University, China
Prof. Søren Linderøth Risø National Laboratory Technical University of Denmark
Prof. Yongqian Liu North China Electric Power University, China
Prof. Dennis L. Loveday University of Loughborough, UK
Prof. Behdad Moghtaderi University of Newcastle, Australia
Prof. Nordine Mouhab University of Rouen, France
Prof. Chem V. Nayar Curtin University of Technology, Australia
Prof. Huang Qili Chinese Academy of Engineering, China
Prof. Ahmed Rachid University of Picardie Jules Verne, France
Prof. V. T. Ranganathan Indian Institute of Science, India
Prof. Saffa B. Riffat University of Nottingham, UK

Prof. Dermot Roddy University of Newcastle, UK
Dr Khizer Saeed University of Brighton, UK
Dr Cesar Sanin University of Newcastle, Australia
Prof. Abdalnaser Sayma University of Sussex, UK
Prof. Javier Sedano University of Burgos, Spain
Dr. Dominique Seguin University of Rouen, France
Dr. Marina Sokolova Kursk State Technical University, Russia
Dr. Jonathan Sprooten HEI Grande Ecole, France
Prof. Mark Sumner University of Nottingham, UK
Prof. Edward Szczerbicki University of Newcastle, Australia
Prof. Alan Turner University of Sussex, UK
Dr. Mummadi Veerachary Indian Institute of Technology Delhi, India
Dr. T. Nejat Veziroglu University of Miami, USA
Prof. Jianping Xiang North China Electric Power University, China & CREST, University of Loughborough, UK
Prof. Hongxing Yang Hong Kong Polytechnic University, China
Prof. Xianhui Yang Tsinghua University, China

Keynote Lectures

Professor Yongqian Liu

North China Electric Power University, People's Republic of China

The development of Wind Energy in China

Abstract: Renewable energy has been selected as one of the strategic important clean energy sources by the Chinese government to cope with the serious environmental problems incurred by the dramatic increasing energy demand as the economy has been growing in the past 30 years. As the most commercially competitive renewable energy except large scale hydro power, wind energy has been keep developing quickly in this country in recent years.

The paper presented the current status and development trend of wind energy industry in China. This includes the manufacturing of wind turbine generator systems, development of wind farms, research and development of wind energy science and technologies, development of wind energy education, polices, etc.

Biography: Dr. Liu has 22 years of professional experience on Wind Power Engineering, Hydro Power Engineering, Automatic Control Engineering, and Computational Fluid Dynamics. He is one of the founders of the Bachelor's programme, Wind Energy and Power Engineering in China, and his achievements include strong record of numerous academic and industrial R&D projects, technological consulting projects, and 30 research papers including 20 journal papers. He studied and worked in Czech and France for 5 years, and participated in 2 EU-China joint research projects under 4th and 5th Framework Programme.

Currently his research focuses on *Output Power Prediction for Wind Farms*, and *Condition Monitoring for Wind Turbine Generator Systems*. Presently, he is in charge of 5 research projects related to wind energy engineering with the total funding of 2 million CNY, including the China's National High-tech "863 Plan" project *Research and development of the short term output power prediction system for wind farm* supported by the Ministry of Education of China.

Academic Activities

- Member of the Chinese Wind Energy Association (2004)
- Member of the Meteorological Resources Application Committee, Chinese Meteorology Society (2007)
- Member of the Wind & Tidal Power Study Committee, Chinese Society for Electrical Engineering (2007)

Professor Sture Holmberg

Royal Institute of Technology, Stockholm, Sweden

Sustainable Energy Solutions and Indoor Climate Conditions in Buildings

Abstract: Within the European Union (EU) there is a demand for a 20 % reduction in the total annual energy consumption before year 2020. The building sector plays a key role. Heating, ventilation and cooling of buildings is responsible for some 40 % of total energy consumption and a significant amount of CO₂ emission. The three basic elements in meeting this EU ambition are to reduce the overall energy demand of buildings, increase the energy efficiency in the building sector and increase the use of renewable energy. The demand for efficient environmental friendly heating systems has in Sweden contributed to the development of low-temperature heat emitters specially adapted to heat pump systems. Here exergy (energy quality) demand of the heat emission system is low and can be satisfied by a number of different sources with great potential for reduced CO₂ emission to the environment. A national programme for energy efficiency and energy-smart constructions - an energy declaration of buildings - is introduced, where both energy and the important indoor environment aspects are considered.

Biography:

Sture Holmberg is a professor at the Royal Institute of Technology (KTH) in Stockholm, Sweden. He received his MSc in Chemical Engineering from Åbo Akademi (Finland) in 1978, and his PhD in Mechanical Engineering from KTH in 1987. For several years he worked as Associated Professor and head of his department, Constructional Engineering and Design, until he in 2007 became regular Professor in Fluid and Climate Theory at KTH.

Fluid and Climate Technology is his new research division at the School of Architecture and Built Environment (ABE) dealing with human health and well being in the built environment, particularly indoor environment. Professor Holmberg's research and PhD education include theory, modelling techniques and also technical solutions that can contribute to improve built environments. Computer-based flow calculations and new ways of visual presentation form the basis of better understanding of important connections between built environments and with occupant's health, comfort and productivity. The ultimate goals are 'healthy and sustainable' indoor environments and energy solutions. CFD (Computational Fluid Dynamics) predictions and methodology are of particular interest in his research group. Professor Holmberg is supervising PhD students, and regularly involved in different teaching activities. His international contacts and collaborations have been of great help for the development of his research area in Sweden. In 1996 Holmberg was a visiting scientist at CSIRO Australia in Melbourne. He was invited by the Advanced Thermal

Technologies Laboratory at the Division of Building, Construction and Engineering. In 1999 he was a visiting scientist at the Massachusetts Institute of Technology (MIT), invited by the Building Technology Program.

Professor Ali Sayigh

Chairman of World Renewable Energy Congress, and Director General of World Renewable Energy Network, Brighton, UK

Renewable Energy and the Changing World

Abstract: The paper will highlight the importance of Renewable Energy and the continued progress in its various forms. The annual increase in photovoltaic production, wind application and solar thermal application over the last 5 years was 30-40%. The USA used to lead in photovoltaic (PV) production, then Japan took the lead but at the end of 2008, China became the leading manufacturer of PV. In the wind industry and application, Germany is the leader followed by Spain, but it is predicted that India will be number one by 2012. Also highlighted is the large investment being made in countries such as United Arab Emirates and Portugal. Large scale marine and wave energy projects in excess of one MW is in operation and bio-fuel is being produced at a competitive price, but there is concern over the use of food crop impacting on food availability and cost. Fuel cells are coming down in price accompanied by high efficiencies. One of the advantages in using Renewable Energy is to meet the electricity demand in many of developing countries. The paper will address climate change and water shortage and demonstrate that Renewable Energy can help solve both of these issues.

Biography: Graduated from London University, & Imperial College, B.Sc. DIC, Ph.D., CEng in 1966. Fellow of the Institute of Energy, and Fellow of the Institution of Electrical Engineers, Chartered Engineer. Prof Sayigh taught at Baghdad University, College of Engineering, King Saud University, College of Engineering, Saudi Arabia, and also Kuwait University as part time professor. Also Head of Energy Department at Kuwait Institute for Scientific Research (KISR) and Expert in renewable energy at AOPEC.

He started working in solar energy since September 1969. In 1984 he establish with Pergamon Press his first International Journal for Solar and Wind Technology as an Editor-in-Chief. In 1990-present Editor-in-Chief of Renewable Energy Journal incorporating Solar & Wind Technology, published by Elsevier Science Ltd, Oxford, UK. He is Founder and Chairman of the ARAB Section of ISES since 1979, was chairman of UK Solar Energy Society for 3-years and consultants to many national and international organizations, among them UNESCO, UNDP, ESCWA, & UNIDO.

Since 1977, Prof Sayigh founded and directed several Renewable Energy Conferences and Workshops in ICTP - Trieste, Italy, Canada, Colombia, Algeria, Kuwait, Bahrain, Malaysia, Zambia, Malawi, India, West Indies, Tunisia, Indonesia, Libya, Taiwan, UAE, Oman, Czech Republic, West Indies, Bahrain, Germany, Australia, Poland, USA and UK. In 1990, he established the World Renewable Energy Congress and in 1992 the

Network (WREN) which have their Congresses every two years, attracting more than 100 countries each time. In 2000 he was one of the founding member of ASTF. Prof Sayigh had supervised and graduated more than 30 Ph D students and 50 M Sc students under his supervision at Reading University and University of Hertfordshire. He edited, contributed, and written more than 20-books, and 300-papers in various international journals and Conferences. Since 1990 cooperated with the British Council, Commonwealth Science Council, UNDP, ESCWA, UNESCO and during the last six years with ISESCO. In 2000-Present initiated and worked closely with Sovereign Publication Company to produce the most popular magazine at annual bases called Renewable Energy (2001, 2002, 2003, 2004, 2005 and 2006).

Professor Bogdan Dlugogorski

Priority Research Centre for Energy, The University of Newcastle, Australia

Assessment of Mineral Carbonation as an Option for Sequestering CO₂ Emissions from Coal Power Stations in the State of New South Wales in Australia

Abstract: Geosequestration, which denotes the storage of CO₂ underground in porous rocks and saline reservoirs, remains the preferred option for storing CO₂ emissions from coal power stations in Australia. Each state in Australia, except New South Wales, has access to good geosequestration sites. In NSW, prospective sites identified in the Darling Basin require field confirmation from a drilling program. However, NSW has large deposits of ultramafic rocks, especially as part of the so-called New England Great Serpentine Belt which crops out 100-150 km from coal power stations of the Hunter Valley. The Belt is more than 300 km in length with an outcrop width of between 10 m and 2 km. Its estimated capacity is around 400 Gt of CO₂, the equivalent of the roughly 1000 years of current Australian CO₂ emission. The belt's rocks comprise serpentinites (lizardite and antigorite minerals, with relatively small amounts of previously mined chrysotile), and partially serpentinised dunites and harzburgites. Serpentine, as sheet minerals, exhibit little reactivity to CO₂ and require energy intensive activation.

In this presentation, in addition to reviewing the Australian deposits of ultramafic rocks, we explore technical issues relating to the inclusion of mineral carbonation as an option for storing the NSW emissions of CO₂. We find that the technologies described in the literature, except for the ARC (Albany Research Council, USA) and the low-volume IET (Institute of Energy Technology, Norway) processes, are not technologically feasible for sequestering CO₂. In particular, pH swing process and the hydrochloric acid extraction processes seem to generate 4 to 7 times as much CO₂ as they consume. Likewise, the feasibility of gas/solid processes based on the carbonation of Mg(OH)₂ depends on the extraction of Mg(OH)₂ from serpentines. A recent assessment of the ARC process appears to err by excluding the CO₂ compression costs, and using electrical energy to activate serpentines. We conclude that mineral carbonation is not yet ready for pilot plant trials in Australia. Intense research is required to optimise the ARC process for serpentinites, in conjunction with serpentinite activation, followed by detailed process economic and life cycle analyses.

Biography: Bogdan Dlugogorski gained undergraduate degrees in chemical engineering and geophysics from the University of Calgary, and MEng and PhD, both in chemical engineering, from McGill University and École Polytechnique de Montréal, respectively. Recently he was awarded a DSc degree in fire science and engineering from the University of Newcastle. He spent 15 months at the National Fire Laboratory

of the National Research Council, Canada, before joining the University of Newcastle, Australia in 1994, where he is now Professor in Chemical Engineering and Director of the Centre for Energy. He is a Fellow of the Australian Academy of Technological Sciences and Engineering, Engineers Australia, and the Royal Australian Chemical Institute. His research interests cover energy, especially CO₂ sequestration, as well as fire and explosive chemistry, with special focus on fire suppression and formation of toxic products in fires. His career's output includes over 200 publications.

Professor Eric Kennedy

Priority Research Centre for Energy The University of Newcastle, Australia

Development of a non-destructive process for treatment of fluorine-containing synthetic greenhouse gases

Abstract: Fluorochemical gases are used broadly and intensively around the world, as heat transfer fluids in air conditioning, foaming agents in refrigeration and building insulation and as fire extinguishing agents. These chemicals often have high global warming potentials (generally greater than 1,000) and some compounds (such as halons and CFCs) are also ozone-depleting. There is considerable interest in minimising the emission of these chemicals into the receiving environment, and many countries have implemented measures aimed at emission reduction.

In this presentation we outline a process developed to treat these chemicals which results in the production of a valuable compound. The technology is based on the reaction of the fluorochemical with methane (which is the major component of natural gas). We hypothesise that the key elementary step involves the coupling of a CF_2 moiety (formed from the synthetic greenhouse gas) with a methyl radical (formed from methane or methane derivatives) will results in the production of $\text{C}_2\text{H}_2\text{F}_2$, (often abbreviated VDF) a highly valued monomer used in the synthesis of acid-resistant fluoropolymers.

Biography: Eric Kennedy gained undergraduate and PhD degrees from the University of New South Wales (Australia). He joined the University of Newcastle, Australia in 1994, where he is now Professor in the Department of Chemical Engineering, Deputy Director of the Centre for Energy and Assistant Dean (Research) in the Faculty of Engineering and Built Environment. His research interests include the development of technologies which reduce greenhouse gas emissions, fundamental studies on fire chemistry, formation of toxic compounds in fires and fire mitigation.

Conference Schedule

| Wednesday 29 April 2009 | |
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| 8.00 - 8.30 | |
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| 19:00 | |
| | Early Registration |
| | Welcome Drinks Reception Introductory talk from Prof Ali Sayigh Chairman of WREC, Director General of WREN |

| Thursday 30 April 2009 | |
|-------------------------------|---|
| 8.00 - 8.30 | Registration |
| 8.30 - 9.00 | |
| 9.00 - 9.30 | Conference Opening & Welcome Ceremony Welcome from Mayor of Brighton & Hove, Councillor Garry Peltzer Dunn |
| 9.30 - 10.00 | Plenary Keynote Talk |
| 10.00 - 10.30 | <i>Prof Yongqian Liu</i> <i>The Development of Wind Energy in China</i> |
| 10.30 - 11.00 | Coffee |
| 11.00 - 11.30 | <i>Parallel Oral Paper Presentation Sessions</i> |
| 11.30 - 12.00 | Session A : Smart Sustainability (11.00 - 13.00) |
| 12.00 - 12.30 | and |
| 12.30 - 13.00 | Session B : Solar and Wind Energy (11.00 - 13.00) |
| 13.00 - 13.30 | Lunch |
| 13.30 - 14.00 | |
| 14.00 - 14.30 | Plenary Keynote Talk |
| 14.30 -15.00 | <i>Prof Sture Holmberg</i> <i>Sustainable Energy Solutions and Indoor Climate Conditions in Buildings</i> |
| 15.00 - 15.30 | Coffee |
| 15.30 - 16.00 | <i>Parallel Oral Paper Presentation Sessions</i> |
| 16.00 -16.30 | Session C : Technologies for Sustainable Buildings (15.30-17.30) |
| 16.30 -17.00 | and |
| 17.00 -17.30 | Session D : Clean and Renewable Energy Technology (15.30-17.30) |
| 17.30 - 18.00 | Round Table Discussion |
| 18.00 - 18.30 | |
| 19.30 | Gala Dinner Al Fresco Restaurant |

| Friday 1 May 2009 | |
|--------------------------|---|
| 8.00 - 8.30 | |
| 8.30 - 9.00 | |
| 9.00 - 9.30 | Registration |
| 9.30 - 10.00 | Plenary Keynote Talk <i>Prof Ali Sayigh</i> <i>Renewable Energy and the Changing World</i> |
| 10.00 - 10.30 | |
| 10.30 - 11.00 | Coffee |
| 11.00 - 11.30 | Parallel Oral Paper Presentation Sessions |
| 11.30 - 12.00 | Session E : Engineering Intelligence and Energy Technologies (11.00-13.00) |
| 12.00 - 12.30 | and |
| 12.30 - 13.00 | Session F : Building Energy Efficiency and Performance (11.00-13.00) |
| 13.00 - 13.30 | |
| 13.30 - 14.00 | Lunch |
| 14.00 - 14.30 | |
| 14.30 - 15.00 | Plenary Keynote Talks <i>Professor Bogdan Dlugogorski</i> <i>Assessment of Mineral Carbonation as an Option for Sequestering CO2 Emissions from Coal Power Stations in the State of New South Wales in Australia</i> |
| 15.00 - 15.30 | <i>Professor Eric Kennedy</i> Development of a non-destructive process for treatment of fluorine-containing synthetic greenhouse gases |
| 15.30 - 16.00 | |
| 16.00 - 16.30 | Coffee |
| 16.30 - 17.00 | Oral Paper Presentation Session |
| 17.00 - 17.30 | Session G : Novel Techniques for Energy Efficiency (16.00-17.30) |
| 17.30 - 18.00 | Closing Ceremony |

Paper Presentations

Session A: Smart Sustainable Systems

Thurs 30 April 11.00-13.00

Chairs: R.J.Howlett and J.Xiang

Smart monitoring of wind turbines using neural networks

Dr Jianping Xiang, Dr Yongqian Liu, Dr Simon Watson

Smart Buildings: Intelligent Software Agents.

Prof.ir. Wim Zeiler, Ir.ing. Gert Boxem, Dr.ir. Rinus van Houten

Solar energy harvesting for ZigBee electronics

Mr Xin Lu, Professor ShuangHua Yang

Multi-Agent Systems Technology for Composite Decision Making in Complex Systems

Dr. Antonio Fernández-Caballero, Dr. Marina Sokolova

Network-Enabled Intelligent Photovoltaic Arrays

Mr Colin Mallett

Decentralized sustainable comfort systems with centralized infrastructures connected by Flexergy

Prof.ir. Wim Zeiler (Technische Universiteit Eindhoven)

Session B: Solar and Wind Energy

Thurs 30 April 11.00-13.00

Chairs: R.Morgan and H.Jin

An innovative building-integrated solar-air collector: presentation and first results

Dr Gilles Notton, Dr Jean-Louis Canaletti, Dr Christian Cristofari

Development and Strategies of Building Integrated Wind Turbines in China

Professor Hong Jin, Miss Bin Cai

Interpolating the Missing Data of Electric Power Generated from PV System

Dr. Kun-Jung Hsu

Development of Short-Term Prediction System for Wind Power Generation Based on Multiple Observation Points

Mr. Muhammad Khalid, Prof Andrey Savkin

Electricity supply to a remote village using grid-connected wind generators

Professor Roger Morgan, Mr Eric Paalman

The role of photovoltaics in reducing carbon emissions in domestic properties

Dr. Fin (J) O'Flaherty, Mr. Craig Jackson, Dr. James (A) Pinder

Armature and Field Controlled DC Motor based Wind Turbine Emulation for Wind Energy Conversion Systems Operating Over a Wide Range of Wind Velocity

Mr. Chetan Patki, Dr. Vivek Agarwal, Mr. Rahul Patel

Session C: Technologies for Sustainable Buildings

Thurs 30 April 15.30-17.30

Chairs: C.Y.H.Chao and E.Rhee

Utilization of Fly-ash Products from Biomass Co-combustion and Zeolite 13X for Building Energy Conservations

Dr C.Y.H Chao, Mr C.W. Kwong

The Effect of Metal Ions on Calcium Carbonate Precipitation and Scale Formation

Dr Jitka MacAdam, Prof Simon Parsons

Lateral Stability of Prefabricated Straw Bale Housing

Mr Christopher Gross, Mr Jonathan Fovargue, Mr Peter Homer, Mr Tim Mander, Prof Peter Walker, Mr Craig White

Monitoring of the moisture content of straw bale walls

Dr Mike Lawrence, Dr Andrew Heath, Professor Pete Waker

An Evaluation of Environmental and Economic Performance of Sustainable Building Technologies for Apartment Houses in Korea

Professor Eon Rhee, Doctoral Student Hae Jin Kang, Associate Professor Jin Chul Park, Minhee Lee, Jong Sik Lee

Managing change in domestic renewable energy schemes

Mr. Craig Jackson

Session D: Clean and Renewable Energy Technology

Thurs 30 April 15.30-17.30

Chairs: E.Hajjaji and A.Aitouche

Optimum energy management of a photovoltaic water pumping system

Ph. D Souhir Sallem, Prof. Maher Chaabene, Prof. M.B.A KAMOUN

Diagnosis by Fault Signature Analysis Applied to Wind Energy

M. ouadie bennoung, M. houcine chafouk

A novel self-organizing neural technique for wind speed mapping

Prof. Giansalvo Cirrincione, Dr. Antonino Marvuglia

Integral fuzzy control for photovoltaic power systems

Prof. El Hajjaji Ahmed, Dr Bosche Jerome, Dr Ben Ammar Mohsen

MACSyME: Modelling, analysis and Control for Systems with Multiple Energy sources

Prof Nacer Msirdi, Phd Adil Mehdary, Prof Aziz Naamane, Dr Hatem TLEJANI

Structural Analysis for Fault detection and Isolation in fuel cell stack system

Mr. quan Yang, Prof Abdel Aitouche, Prof Belkacem Ould Bouamama

Session E: Engineering Intelligence and Energy Technologies

Fri 1 May 11.00-13.00

Chairs: C.Sanin and B.Dlugogorski

Efficiency analysis of crossflow plate heat exchanger for indirect evaporative cooling
Xuelai Liu Liu, Jizhi Li Li, Yongan Li Li, Hongxing Yang Yang

Thermal Work Condition Analysis of Teaching Building Heating Network in Winter
Vacation with User Regulation
Doctor Li Shuang, Associate Professor Zhao Hua, Professor Zhao Jianing

Integrated Building Management Systems for Sustainable Technologies: Design
aspiration and operational shortcomin
Dr Abbas Elmualim

Smart Use of Knowledge: A Case Study of Constructing Decisional DNA on Renewable
Energy.
Dr. Cesar Sanin, Mr. Paul Cayfordhowell, Prof. Edward Szczerbicki

A study of Photophysical properties of end Polymeric material
Dr. Jahangir Payamara

Renewable Energy Source Emulator
Dr. Aparna Viswanath, Mr. Chu Choon, Dr. Colin Coates

Session F: Building Energy Efficiency and Performance

Fri 1 May 11.00-13.00

Chairs: W.Zeiler and S.Pullen

Geothermal Active Building concept

Prof.ir. Wim Zeiler, Ir.ing. Gert Boxem

Heating supply in Kazakhstan: Concept - Simulation? Comparison

*Dipl.-Ing. Gulzhan Tleukenova, Prof. Dr.-Ing. Norbert Fisch, Dipl.-Ing. Mike Heuer, Dr. -
Ing. Lars Kühl, Prof. Dr. techn. Reinhard Leithner*

Towards a More Holistic and Complementary Approach to Modelling Energy
Consumption in Buildings

Dr Stephen Pullen

Energy Consumption in the Greek Hotel Sector

Miss Eva Maleviti

Investigating the applicability of different thermal comfort models in Kuwait
classrooms operated in hybrid air-conditioning mode

Eng. Khaled Al-Rashidi, Dr. Nawaf Al-Mutawa, Prof. Dennis Loveday

Water and energy efficient showers

Dr David Phipps, Prof Rafid Alkhaddar, Prof Roger Morgan

Session G: Novel Techniques for Energy Efficiency

Fri 1 May 16.00-17.30

Chairs: H.Zhao and S.Walters

Research of Solar-Kang Heating Systems Design for Rural House in Cold Areas of China

Lecturer Chunyan Zhou, Professor Hong Jin

Research on energy-efficient exterior walls of rural housing in Northern China

Professor Hong Jin

Family Thermal Performance Analysis Based on Household Metering

Professor Hua Zhao, Master Hongxiang Su

The Investigation and Analysis of Indoor Temperature Desire of Building Users in Harbin

Professor Hua Zhao, Master Hongxiang Su

Simulated performance of Earthtube for cooling of office buildings in Southeast of UK

Mr Abdullahi Ahmed, Dr Kassim Gidado, Dr Kenneth Ip, Professor Andrew Miller

Study on a novel hybrid desiccant dehumidification and air conditioning system

Dr. Sumathy Krishnan, Prof. Yanjun Dai, Prof. Ruzu Wang, Dr Li Yong



International

*Innovation in Knowledge Based and Intelligent
Engineering Systems*



Introduction to the KES International Organisation

KES International (KES) is a worldwide association for researchers providing opportunities for knowledge transfer, networking, publication and beneficial interaction. The focus of KES was originally Intelligent and Knowledge Based Systems; however, KES has recently broadened its areas of activity into renewable energy (through links with the World Renewable Energy Network and Congress).

Formed in 2001, KES regularly provides networking opportunities for Intelligent Systems researchers and practitioners through one of the largest conferences of its kind. KES produces an academic journal and a book series, both published by leading Netherlands scientific publisher, IOS Press. On an occasional basis KES may organise tutorials and summer schools, and other ventures, for example, e-publishing.

KES conferences have been held since 1997. In 1997, 1998 and 1999, the conferences were in Adelaide, Australia. In 2000 the conference was in Brighton, UK; in 2001, Osaka, Japan; in 2002, Crema near Milan, Italy; in 2003, Oxford, UK; in 2004, Wellington, New Zealand; in 2005, Melbourne Australia; in 2006, Bournemouth, UK; in 2007, Salerno, Italy; in 2008, Zagreb, Croatia. In 2009 it the conference will be in Santiago, Chile and in 2010, Cardiff, Wales, UK. Delegate numbers have grown from about 100 in 1999, to the present figure of several hundred. The conference attracts delegates from many different countries, in Europe, Australasia, the Pacific Rim, Asia and the Americas. In addition to its annual conference, KES also organises symposia on specific technical topics, for example, Intelligent Decision Technologies, Agent and Multi Agent Systems, and Intelligent and Interactive Multimedia Systems and Services.

Published by IOS Press in the Netherlands, the KES Journal has joint Editors-in-Chief Dr R.J.Howlett (University of Brighton) and Professor Bogdan Gabrys (University of Bournemouth). There are Associate Editors in the UK, the US, Poland, Australia, Germany and Czechoslovakia. The Journal accepts academic papers (articles) from authors in many countries of the world and has approximately 600 subscribers in about 50 countries.

KES International is headed by the KES Executive Board consisting of Executive Chair Dr R.J.Howlett, Founder and Chair (International Relations) Professor Lakhmi Jain and Chair (Academic Affairs) Professor Bogdan Gabrys. The Executive Board takes advice from an Advisory Group made up of about a dozen prominent researchers from various countries.

KES is an independent association, operated on a not-for-profit basis, from a base in the U.K. A number of universities around the world contribute to the organisation, operation and academic activities of KES.

Involving over 3000 researchers drawn from universities and companies world-wide, KES is in an excellent position to facilitate international research co-operation and generate synergy in the area of applied artificial intelligence.

*KES International,
2nd Floor, 145-157 St John Street,
London,
EC1V 4PY,
United Kingdom*

Web Site: <http://www.kesinternational.org>

Email: kes@kesinternational.org



KES-AMSTA-2009

3rd International KES Symposium on
**Agents and Multi-agent Systems –
Technologies and Applications**

Uppsala, Sweden
3 June – 5 June 2009

<http://amsta-09.kesinternational.org>



UPPSALA
UNIVERSITET

KES International
Conference Series

Welcome! KES-AMSTA-2009 is an international scientific symposium for research in the field of agent and multi-agent systems. The aim of the symposium is to provide an internationally respected forum for scientific research in the technologies and applications of agent and multi-agent systems. Agents and multi-agent systems are related to a modern software paradigm which has long been recognized as a promising technology for constructing autonomous, complex and intelligent systems. This symposium will provide and excellent opportunity for researchers to discuss modern approaches and techniques for agent and multi-agent systems and their applications. KES-AMSTA-2009 is organized by [KES International](#) and [Uppsala University](#), Sweden, and will take place in Uppsala. Uppsala is an old picturesque Scandinavian city with roots in middle-ages and with an international airport close at hand. This city is located in the middle-east of Sweden, nearby the capital city, 70 km from the city center of Stockholm. Arlanda International Airport, located between Uppsala and Stockholm, is only 35km from Uppsala, easily accessed by train and bus. Uppsala University is one of the oldest universities of Europe and the oldest university in the Nordic countries, with a firmly established world-class center of research, along with a first-class educational infrastructure. Such infrastructure equips Uppsala's 40,000 national and international students to become international leaders, and allows the 6,000 national and internationally faculty members to develop ground-breaking research in many fields and hundreds of years. The scope of the symposium includes the following topics:

Agent Systems: Formal models of agency. Agent architectures. BDI architecture. Learning, evolution, and adaptation. Perception and action. Communication: languages, semantics, pragmatics, protocols, and conversations. Knowledge representation Computational complexity. Autonomous or humanoid robots. Social robots and robot teams. Autonomy aspect. Cognitive models, including emotions and philosophies. Embodied and believable agents. Emergent behavior. Ontologies.

Multi-agent Systems: Cooperative distributed problem solving. Task and resource allocation. Mechanism design, auctions, and game theory. Modeling other agents and self. Multi-agent planning. Negotiation protocols. Multi-agent learning. Conflict resolution. Trust and reputation management. Privacy, safety and security. Scalability, robustness and dependability. Social and organizational structures. Verification and validation. Novel computing paradigms (autonomic, grid, P2P, ubiquitous computing). Brokering and matchmaking. Agent-oriented software engineering, including implementation languages and frameworks. Mobile agents. Performance, scalability, robustness, and dependability. Verification and validation. E-business agents. Pervasive computing. Privacy, safety, and security.

Tools and Applications: Simulation systems. Web services and service-oriented computing. Artificial social systems. Autonomic computing. Case studies and reports on deployments. Computational infrastructures. Information retrieval. Web services and semantic web. E-learning systems. E-institutions. E-commerce.

CALL FOR PAPERS

Papers are invited from prospective authors with interests on the indicated symposium topics and related areas of application. All contributions should be original and not published elsewhere or intended to be published during the review period. Contributions from more applied related fields in industry and commerce are very welcome. All accepted papers must be presented by one of the authors who must register for the conference and pay the fee. To ensure high quality, all papers will be thoroughly reviewed by the KES-AMSTA-09 International Programme Committee. The symposium proceedings are planned to be published by [Springer-Verlag](#) in [LNCS/LNAI](#) series (subject to confirmation). Submitted papers should be prepared in LNCS/LNAI style and should not exceed 10 pages. Extended versions of selected papers will be considered for publication in special issues to be included in several journals indexed by ISI, [KES Journal](#) and [Int. Journal of Intelligent Information and Database Systems](#). Ph.D. students are invited to submit papers to Doctoral Track. Special sessions are also welcome.

IMPORTANT DATES

Submission of papers: 20 Jan. 2009
Notification of acceptance: 10 Feb. 2009
Final papers to be received: 1 Mar. 2009
Authors / Early registration: 6 Mar. 2009
Symposium Session: 4 Jun. – 5 Jun. 2009

ORGANIZATION

Honorary Chair: L. Magnusson, Uppsala University, Sweden
General Co-Chairs: A. Håkansson, Uppsala University, Sweden and N.T. Nguyen, Wrocław University of Technology, Poland
Executive Chair: R.J. Howlett, University of Brighton, UK
Program Co-Chairs: R.L. Hartung, Franklin University, USA, and D. Sharma, Canberra University, Australia
Local Organizing Chair: T. Palm, Uppsala University, Sweden
Publicity Co-Chairs: Z. Kiziltan, University of Bologna, Italy and E. Moradian, Uppsala University, Sweden
Invited Session Chair: L.C. Jain, University of South Australia, Australia
Doctoral Track Chair: A. Pietrusiewicz, Wrocław University of Technology, Poland

KES-AMSTA-2009 is part of the AMSTA Series chaired by N.T. Nguyen, which is a sub-series of KES International Conference Series, Chairs L.C. Jain and R.J. Howlett

Web Site: <http://amsta-09.kesinternational.org>

Email Enquiries: amsta-09@kesinternational.org



KES IIMSS 2009

2nd International Symposium on Intelligent Interactive Multimedia Systems and Services

16-17 July 2009
Mogliano Veneto (near Venice)
Hosted by the University of Milan, Italy

WELCOME

We are pleased to invite participation in KES-IIMSS-09 organized by the Department of Information Technologies of University of Milan in conjunction with **KES International**. KES-IIMSS-09 is an international scientific symposium for research in the fields of intelligent interactive multimedia systems and services. The aim of the symposium is to provide an internationally respected forum for scientific research in the technologies and applications of intelligent interactive multimedia systems and services. The conference will take place in Mogliano Veneto, close to the beautiful Venice. The conference will consist of keynote talks, oral and poster presentations, invited sessions and workshops, on the applications and theory of intelligent interactive multimedia systems and services and related areas. It will provide excellent opportunities for the presentation of interesting new research results and discussion about them, leading to knowledge transfer and generation of new ideas.

SCOPE OF THE CONFERENCE

GENERIC TOPICS OF INTEREST

Mobile Technologies and Intelligent Services
 Automated and Intelligent Lecture Rooms
 Intelligent Audio and Music Storage/Retrieval/Transmission/Analysis
 Intelligent Video Storage/Retrieval/Transmission/Analysis
 Intelligent Image Storage/Retrieval/Transmission/Analysis
 Knowledge-based Multimedia Signal Processing
 Security in Knowledge-based Multimedia Systems
 Knowledge-based Virtual and Augmented Reality
 Knowledge-based Human-Computer Interaction
 Intelligent Multimodal Interactive Systems
 Digital Rights Management
 Intelligent Digital Library Services
 Adaptive hypermedia systems
 Intelligent narrative environments
 User Modeling
 Adaptive Recommender Services
 Multimedia Notification and Decision Support Services
 Intelligent Information Systems
 Knowledge Technologies for the Semantic Web
 Intelligent e-Learning Multimedia
 Intelligent e-Commerce Multimedia
 Intelligent e-Government Multimedia
 Intelligent e-Entertainment Multimedia
 Intelligent e-Medicine
 Intelligent e-Legal Services
 Intelligent Environmental Multimedia Systems
 Intelligent Remote Sensing and Telemonitoring Services
 Intelligent GIS Services
 Intelligent Devices
 Smart-Home Multimedia Services
 Multimedia Services to People with Special Needs
 Multimedia Communication Services
 Knowledge-based Applications

CALL FOR CONTRIBUTION

CALL FOR PAPERS

Contributions are invited from prospective authors with interests in the indicated conference topics and related areas of application. All contributions should be high quality, original and not published elsewhere or submitted for publication during the review period. Please see the web site for details of the required paper format. Papers will be thoroughly reviewed by the International Program Committee, and may be accepted for oral or poster presentation. The conference proceedings will be published by Springer as a book in their Computational Intelligence Series. Extended versions of selected papers will be considered for publication in the KES Journal.

CALL FOR TRACK/SUBJECT CHAIRS

Experienced researchers in the field are invited to chair wide scope tracks covering the various facets of the Intelligent Interactive Multimedia Systems and Services, taking responsibility for overseeing the paper review process within their domain of expertise. Please contact the conference Secretariat outlining your experience and area of expertise if you would like to contribute as a Subject Chair.

CALL FOR INVITED SESSIONS AND WORKSHOPS

We invite researchers on hot topics and fresh ideas in the field to organize invited sessions, or parallel workshops of a half or full day, gathering a minimum of six papers. Please, contact the Conference Secretariat enclosing the title and content of the proposed session, and tentatively involved research teams. We also welcome suggestions for other activities that will appeal to our delegates.

DEADLINES: General Sessions

Submission of papers: 2 March 2009
 Notification of acceptance: 16 March 2009
 Final paper to be received by: 6 April 2009

DEADLINES: Invited Sessions and Workshops

Proposal for Invited Sessions/Workshops: as soon as possible.
 Session/Workshop Chair sets submission deadlines
 Final paper to be uploaded by: 6 April 2009

All presenting authors must register and pay the conference fee by 30 March 2009 for their papers to appear in the proceedings

ORGANISATION

KES-IIMSS-09 General Co-Chairs:
 Ernesto Damiani, University of Milan, Italy
 Jechang Jeong, Hanyang University, Korea

KES-IIMSS-09 Executive Chair:
 R. J. Howlett, University of Brighton, UK

Invited Sessions Chair:
 L. C. Jain, University of South Australia

Honorary Chairs
 George A. Tshirintzis and Maria Virvou, University of Piraeus, Greece

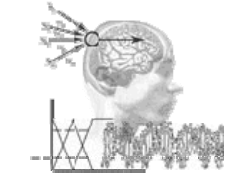
KES International Conference Series Chairs: L.C. Jain and R.J. Howlett



KES2009

13th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems

28, 29 and 30 September 2009
Santiago, Chile



WELCOME

We are pleased to invite participation in KES2009 organized by the University of Chile, its Faculty of Science Physics and Mathematics and Department of Industrial Engineering in conjunction with [KES International](http://www.kesinternational.org). The conference will take place in Santiago, the capital of the Republic of Chile. Santiago is located in the country's central valley, at an elevation of 520 m (1,700 ft). It was founded 1541 with the name Santiago de Nueva Extremadura. Today Santiago has been transformed into one of Latin America's most modern metropolitan areas. The conference will consist of keynote talks, oral and poster presentations, invited sessions and workshops, on the applications and theory of intelligent systems and related areas. It will provide excellent opportunities for the presentation of interesting new research results and discussion about them, leading to knowledge transfer and generation of new ideas.

SCOPE OF THE CONFERENCE

GENERIC TOPICS OF INTEREST

Knowledge-Based Systems, Expert Systems, Cognitive Systems, Neural Networks, Artificial Immune Systems, Fuzzy Techniques and Systems, Genetic Algorithms and Evolutionary Computing, Hybrid Intelligent Systems, Intelligent Agents and Multi-Agent Systems, Self organizing and complex systems, Knowledge Discovery and Data Mining, Data Analysis and Pattern Recognition, Machine Learning, Bayesian Networks, Knowledge Representation and Management, Computational neuroscience, Planning, Spatial & Temporal Reasoning, Knowledge Acquisition.

INTELLIGENT APPLICATIONS

Industrial Control, Monitoring and Planning, Intelligent Web-based Systems, Fault Diagnosis, Robotics, Image Processing, Machine & Computer Vision, Medical & Diagnostic Systems, Financial & Stock Market Monitoring and Prediction, Speech Processing and Synthesis, Natural Language Processing, Environmental Monitoring, Power Electronics & Drives, High Voltage Systems, Engine Control and Vehicle Applications, Signal and Time Series Processing, Wavelets.

EMERGENT INTELLIGENT TECHNOLOGIES

Pervasive Computing, Intelligent Web Personalization, Ubiquitous Computing, Context-aware and Affective (Emotional) Computing, Mobile Computing and Systems, Business Intelligence Systems, Human-centered Computing, Intelligent User Interfaces, Cognitive Interfaces, User profiling, Evolvable Hardware, DNA Computing, Immunocomputing, Artificial Life, Bioinformatics using Intelligent & Machine Learning Techniques, Micro array Data Analysis, Intelligent Tutoring Systems, Artificial Intelligence and Information Agents on the Internet, E-commerce/E-business and E-learning, Semantic Web, Intelligent Web Mining & Applications, Virtual Reality & Multi-Media Intelligent Information Systems, Blind Source Separation.

CALL FOR CONTRIBUTION

CALL FOR PAPERS

Contributions are invited from prospective authors with interests in the indicated conference topics and related areas of application. All contributions should be high quality, original and not published elsewhere or submitted for publication during the review period. Please see the web site for details of the required paper format. Papers will be thoroughly reviewed by the International Program Committee, and may be accepted for oral or poster presentation. The conference proceedings will be published by Springer in LNCS/LNAI. Extended versions of selected papers will be considered for publication in the KES Journal.

CALL FOR TRACK/SUBJECT CHAIRS

Experienced researchers in the field are invited to chair wide scope tracks covering the various facets of the Intelligent Systems, taking responsibility for overseeing the paper review process within their domain of expertise. Please contact the conference Secretariat outlining your experience and area of expertise if you would like to contribute as a Subject Chair.

CALL FOR INVITED SESSIONS AND WORKSHOPS

We invite researchers on hot topics and fresh ideas in the field to organize invited sessions, or parallel workshops of a half or full day, gathering a minimum of six papers. Please, contact the Conference Secretariat enclosing the title and content of the proposed session, and tentatively involved research teams. We also welcome suggestions for other activities that will appeal to our delegates.

DEADLINES: General Sessions

Submission of papers: 29 March 2009
Notification of acceptance: 25 April 2009
Final paper to be received by: 23 May 2009

All presenting authors must register and pay the conference fee by 7 June 2009 for their papers to appear in the proceedings

All deadlines and other details are provisional at the stage.

DEADLINES: Invited Sessions and Workshops

Proposal for Invited Sessions/Workshops – as soon as possible.
Session/Workshop Chair sets submission deadlines
Final paper to be received by: 23 May 2009

ORGANISATION

KES2009 General Chair:
J.D. Velásquez, University of Chile, Chile

KES2009 Executive Chair:
R. J. Howlett, University of Brighton, UK

Invited Sessions Chair:
L. C. Jain, University of South Australia

KES2009 E-mail: kes2009@kesinternational.org

Web Site: <http://kes2009.kesinternational.org>



KES-AMSTA-2010

4th International KES Symposium on
**Agents and Multi-agent Systems –
 Technologies and Applications**

Gdynia, Poland
 2 – 4 June 2010

<http://amsta-10.kesinternational.org>



*KES International
 Conference Series*

www.kesinternational.org
kes@kesinternational.org

Welcome! KES-AMSTA-2010 is an international scientific symposium for research in the field of agent and multi-agent systems. The aim of the symposium is to provide an internationally respected forum for scientific research in the technologies and applications of agent and multi-agent systems. Agents and multi-agent systems are related to a modern software paradigm which has long been recognized as a promising technology for constructing autonomous, complex and intelligent systems. This symposium will provide and excellent opportunity for researchers to discuss modern approaches and techniques for agent and multi-agent systems and their applications. KES-AMSTA-2010 is organized by **KES International** and **Gdynia Maritime University** in Poland. The university in which it will take place is located in the port city Gdynia known for its picturesque seashore with marinas, promenades and yacht clubs. However there is more to enjoy nearby, as Gdynia is a part of the Tricity, which also includes a thousand-year-old Gdańsk, Poland's cultural gem, and Sopot, a health-resort with its beautiful Landscape Park and splendid sandy beaches. The many attractions of the area are easily reached via **Gdańsk Lech Wałęsa International Airport**, and all three cities are linked by frequent and comfortable commuter lines. Gdynia Maritime University is a specialized technical university and the largest Polish and European Centre for higher maritime education. The University is actively involved in numerous national and European research projects. The scope of KES-AMSTA-2010 includes the following topics:

Agent Systems: Formal models of agency. Agent architectures. BDI architecture. Learning, evolution, and adaptation. Perception and action. Communication: languages, semantics, pragmatics, protocols, and conversations. Knowledge representation Computational complexity. Autonomous or humanoid robots. Social robots and robot teams. Autonomy aspect. Cognitive models, including emotions and philosophies. Embodied and believable agents. Emergent behavior. Ontologies.

Multi-agent Systems: Cooperative distributed problem solving. Task and resource allocation. Mechanism design, auctions, and game theory. Modeling other agents and self. Multi-agent planning. Negotiation protocols. Multi-agent learning. Conflict resolution. Trust and reputation management. Privacy, safety and security. Scalability, robustness and dependability. Social and organizational structures. Verification and validation. Novel computing paradigms (autonomic, grid, P2P, ubiquitous computing). Brokering and matchmaking. Agent-oriented software engineering, including implementation languages and frameworks. Mobile agents. Performance, scalability, robustness, and dependability. Verification and validation. E-business agents. Pervasive computing. Privacy, safety, and security.

Tools and Applications: Simulation systems. Web services and service-oriented computing. Artificial social systems. Autonomic computing. Case studies and reports on deployments. Computational infrastructures. Information retrieval. Web services and semantic web. E-learning systems. E-institutions. E-commerce.

CALL FOR PAPERS

Papers are invited from prospective authors with interests on the indicated symposium topics and related areas of application. All contributions should be original and not published elsewhere or intended to be published during the review period. Contributions from more applied related fields in industry and commerce are very welcome. All accepted papers must be presented by one of the authors who must register for the conference and pay the fee. To ensure high quality, all papers will be thoroughly reviewed by the KES-AMSTA-10 International Programme Committee. The symposium proceedings are planned to be published by **Springer-Verlag** in **LNCS/LNAI** series (subject to confirmation). Submitted papers should be prepared in LNCS/LNAI style and should not exceed 10 pages. Extended versions of selected papers will be considered for publication in special issues to be included in several journals indexed by ISI, **KES Journal** and **Int. Journal of Intelligent Information and Database Systems**. Ph.D. students are invited to submit papers to Doctoral Track. Special sessions are also welcome.

IMPORTANT DATES

Submission of papers: 1 Dec. 2009
 Notification of acceptance: 15 Jan. 2010
 Final papers to be received: 15 Feb. 2010
 Authors / Early registration: 20 Feb. 2010
 Symposium: 2 Jun – 4 Jun 2010

ORGANIZATION

Honorary Chair: R. Cwilewicz, Rector, Gdynia Maritime University, Poland
General Co-Chairs: P. Jędrzejowicz, Gdynia Maritime University, Poland and N.T. Nguyen, Wrocław University of Technology, Poland
Executive Chair: R.J. Howlett, University of Brighton, UK
Program Co-Chairs: D. Barbucha, Gdynia Maritime University, Poland,
 R. Katarzyna, Wrocław University of Technology, Poland and A. Sharpanskykh, VU University Amsterdam, The Netherlands
Local Organizing Chair: I. Czarnowski, Gdynia Maritime University, Poland
Publicity Co-Chairs: E. Ratajczak-Roppel, Gdynia Maritime University, Poland and I. Wierzbowska, Gdynia Maritime University, Poland
Invited Session Chair: L.C. Jain, University of South Australia, Australia
Doctoral Track Chair: D. Król, Wrocław University of Technology, Poland

KES-AMSTA-2010 is part of the AMSTA Series chaired by N.T. Nguyen, which is a sub-series of KES International Conference Series, Chairs L.C. Jain and R.J. Howlett

Web Site: <http://www.amsta-10.kesinternational.org>

Email Enquiries: amsta-10@kesinternational.org



KES2010

14th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems

8, 9 and 10 September 2010
Cardiff, UK

WELCOME

We are pleased to invite participation in KES2010 organized by the School of Engineering at Cardiff University, in conjunction with KES International. The conference will take place in Cardiff, the capital of Wales. Cardiff is well established as 'Europe's Youngest Capital' but its history dates back more than 2000 years to the Romans. It was once one of the busiest ports in the world, exporting the coal which fuelled the industrial revolution. Lively, elegant, confident, cosmopolitan, Cardiff caters for all tastes, offering everything from the excitement of a vibrant city life to the peace and tranquility of the nearby coast and countryside. A city with both heritage and ambition Cardiff has a distinctive character, a good quality of life, and a growing national and international reputation. The conference will consist of keynote talks, oral and poster presentations, invited sessions and workshops, on the applications and theory of intelligent systems and related areas. It will provide excellent opportunities for the presentation of interesting new research results and discussion about them, leading to knowledge transfer and generation of new ideas.

SCOPE OF THE CONFERENCE

GENERIC TOPICS OF INTEREST

Knowledge-Based Systems, Expert Systems, Cognitive Systems, Neural Networks, Artificial Immune Systems, Fuzzy Techniques and Systems, Genetic Algorithms and Evolutionary Computing, Hybrid Intelligent Systems, Intelligent Agents and Multi-Agent Systems, Self organizing and complex systems, Knowledge Discovery and Data Mining, Data Analysis and Pattern Recognition, Machine Learning, Bayesian Networks, Knowledge Representation and Management, Computational neuroscience, Planning, Spatial & Temporal Reasoning, Knowledge Acquisition, Semantic-Based Systems.

INTELLIGENT APPLICATIONS

Industrial Control, Monitoring and Planning, Intelligent Web-based Systems, Fault Diagnosis, Robotics, Image Processing, Machine & Computer Vision, Medical & Diagnostic Systems, Financial & Stock Market Monitoring and Prediction, Speech Processing and Synthesis, Natural Language Processing, Environmental Monitoring, Power Electronics & Drives, High Voltage Systems, Engine Control and Vehicle Applications, Signal and Time Series Processing, Wavelets.

EMERGENT INTELLIGENT TECHNOLOGIES

Pervasive Computing, Intelligent Web Personalization, Ubiquitous Computing, Context-aware and Affective (Emotional) Computing, Mobile Computing and Systems, Business Intelligence Systems, Human-centered Computing, Intelligent User Interfaces, Cognitive Interfaces, User profiling, Evolvable Hardware, DNA Computing, Immunocomputing, Artificial Life, Bioinformatics using Intelligent & Machine Learning Techniques, Micro array Data Analysis, Intelligent Tutoring Systems, Artificial Intelligence and Information Agents on the Internet, E-commerce/E-business and E-learning, Semantic Web, Intelligent Web Mining & Applications, Virtual Reality & Multi-Media Intelligent Information Systems, Blind Source Separation.

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DEADLINES: General Sessions

(Dates to be confirmed)
Submission of papers: 1 March 2010
Notification of acceptance: 1 April 2010
Final paper to be received by: 1 May 2010

DEADLINES: Invited Sessions and Workshops

(Dates to be confirmed)
Proposal for Invited Sessions/Workshops – as soon as possible.
Session/Workshop Chair sets submission deadlines
Final paper to be received by: 1 May 2010

All presenting authors must register and pay the conference fee by 1 May 2010 for their papers to appear in the proceedings

All deadlines and other details are provisional at the stage.

ORGANISATION

General Chair:
R. Setchi, Cardiff University, UK
Program Chair:
Y. Rezgui, Cardiff University, UK

Executive Chair:
R. J. Howlett, University of Brighton, UK
Honorary Chair:
L. C. Jain, University of South Australia