

Foreword

FLINS, an acronym originally for Fuzzy Logic and Intelligent Technologies in Nuclear Science (1994), has been launched in line with the Belgian Nuclear Research Centre (SCK•CEN)'s objective to give PhD and Postdoc researchers the opportunity to carry out future-orientated research. FLINS was initially built within one of the above-mentioned postdoc positions. Now fourteen years later FLINS has been extended to *Computational Intelligence in Decision and Control* (2008) to advance the theory and applications of decision making and control for complex systems related research in particular. FLINS'08 is the eighth in a series of conferences on computational intelligence systems. It follows the successful FLINS'94 in Mol, FLINS'96 in Mol, FLINS'98 in Antwerp, FLINS'00 in Bruges, FLINS'02 in Gent, FLINS'04 in Blankenberge, Belgium, and FLINS'06 in Genova, Italy. FLINS'08 in Madrid, Spain, once again aims at covering state-of-the-art research and development in all aspects related to *Computational Intelligence in Decision and Control*. The principal missions of FLINS are: (1) conducting research on computational intelligence systems for solving intricate problems pertaining to nuclear/power research and related complex systems; (2) bridging the gap between machine intelligence and complex systems via joint research with Belgian, European, and international research institutes and universities; and (3) encouraging interdisciplinary research and bringing multi-discipline researchers together via the international FLINS conferences on computational intelligence systems.

FLINS'08, organized by Complutense University, Madrid, Spain, co-sponsored by the Belgian Nuclear Research Centre (SCK•CEN), Ghent University (UGent) in Belgium, Complutense University, Technical University of Madrid and the Government of Spain, and co-supported by University of Alcalá de Henares, the Interdisciplinary Institute of Mathematics of Madrid (IMI), European Centre for Soft Computing in Spain and European Society for Fuzzy Logic and Technology (EUSFLAT), offers a unique international forum to present and discuss techniques that are new and promising for *Computational Intelligence in Decision and Control* and to launch international co-operations.

The FLINS'08 proceedings consist of a series of invited lectures by distinguished professors and individual presentations, in a total of 184 papers selected out of 292 regular submissions plus 6 invited plenary and semi-plenary papers from 35 countries. The 3 plenary lectures are: (a) *Soft computing applications in prognostics and health management* by Piero Bonissone (General Electric, USA), (b) *Knowledge sharing and collaboration in fuzzy*

processing by Witold Pedrycz (University of Alberta, Canada), (c) *Why do fuzzy representations need a careful design* by Enric Trillas (European Centre for Soft Computing, Spain), and the 3 semi-plenary lectures are: (d) *SCK•CEN: The Belgian Nuclear Research Centre research towards a sustainable option* by Pierre D'hondt (SCK•CEN, Belgium), (e) *New information processing methods for control in magnetically confinement nuclear fusion* by Andrea Murari (Consorzio RFX/ENEA EURATOM, Spain), (f) *What is Soft Computing? Revisiting possible answers* by Luis Magdalena (European Institute for Soft Computing, Spain). Each of the 6 invited papers is embedded as the first paper in the 6 contributed parts, respectively, in the proceedings: (I) Data Analysis and Information Processing, (II) Knowledge Representation and Learning, (III) Classification, Clustering, and Aggregation Techniques, (IV) Decision Making and Risk Analysis, (V) Decision Support Systems and Web Intelligence, and (VI) Control and Industrial Applications.

We are pleased to announce the launch of a new international journal on *Computational Intelligence Systems* in line with FLINS activities by Atlantis Press in Paris. The journal will also publish selected and extended papers from FLINS'08 in the near future. At the same time, we are happy to embed the FLINS'08 proceedings into the World Scientific Proceedings Series on *Computer Engineering and Information Science*.

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Da Ruan, FLINS'08 General Chair
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