



Special Session on:

Advanced Intelligent Control in Robotics and Mechatronics
AICRoM

Session Organiser:

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Advanced Intelligent Control is an inter-disciplinary field which combines and extends theories and methods from control theory, computer science, operations research areas with the aim of developing controllers which are highly adaptable to significant unanticipated changes.

Intelligent control is the control method which imitates human intelligence in learning, decision-making, and problem solving. The human characteristic consists of experience, learning, adapting, and changing their methods of approach and solving problems. Intelligent control techniques allow the development of an environment which leads to recreating the advantages of natural intelligence with artificial intelligence. Advances in sensors, actuators, computation technology and communication networks help provide the necessary tools for the implementation of intelligent control hardware. Practical applications for this control method are aimed toward a variety of relevant scientific research fields that include robotics and automation, with applications such as human aid mechatronics HAM (Human Adaptive Mechatronics), transporting nuclear weights (TSN), moving in unstructured and uneven environments for military applications (DAM).

The scope of this special session is to present and discuss new trends in the design, control and applications of real time control of robots and mechatronic systems using advanced intelligent control methods and techniques.

Submissions for this special session should address, but are not limited to, the following or related topics:

- **Robotics and Mechatronics**
- **Intelligent Control Systems**
- **Intelligent Learning Control**
- **Intelligent Control Architecture**
- **Hierarchical Intelligent Controllers**
- **Hybrid Control Systems**
- **Intelligent Information Fusion**
- **Learning and Adaptive Sensor Fusion**
- **Neural Networks and Applications**
- **Neural and Fuzzy Techniques**
- **Intelligent User Interface**
- **Fuzzy Logic and Learning**
- **Genetic Algorithms**
- **Biologically Inspired Systems**