



**41st Annual Conference of the IEEE Industrial Electronics Society
Pacifico Yokohama - Yokohama, JAPAN
November 9 - 12, 2015
Special Session on**

Biomimetics and Intelligent Robotics

Organized and co-chaired by:

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Call for Papers

The special session aims to bring researchers in the quickly emerging field of Biomimetics and Intelligent Robotics.

The special session aims to bring researchers in the emerging field of Biomimetics, Intelligent Robotics and Mechatronics. Autonomous and Intelligent Systems that are able to adapt to different task, interact, autonomously navigate and adapt their behaviors in various environments using intelligent mechanisms, sensors, artificial perception and sensor fusion, and intelligence. Making biologically inspired intelligent robots requires understanding the biological models as well as advancements in different interdisciplinary areas of research. Intelligent Robotics and Mechatronics research approaches incorporate materials and techniques drawn from naturally made substances, and resemble biological systems in structure and/or function as necessary. The evolving merging interdisciplinary field of Biomimetics and Intelligent Robotics focuses on making nature as a model of inspiration that would immensely: Help conscious abstraction of new principles and ideas; Foster innovative design collections; Find out new techniques and functionalities; Seek new paradigms and intelligent & efficient methods; Develop new materials, sensors and actuators at nature's

scale; Design new streams of intelligent machines, mechanisms, robots, systems, devices, algorithms, etc .

The session enables researchers in the field to present their new findings and contribute to latest developments.

Topics of interest include, but are not limited to:

- ✓ Intelligent Robotics : Control, Navigation and Mechanisms
- ✓ Bioinspiration: Control, Navigation and Mechanisms
- ✓ Human Adaptive and Friendly Mechatronics
- ✓ Bioinspiration and Smart Sensors
- ✓ Bioinspiration and Actuators
- ✓ Bioinspiration: Learning Techniques and Computational Intelligence
- ✓ Biomechatronics, Biomedical and Robotics
- ✓ Bioinspiration and Control
- ✓ Bionic Human and Artificial Muscles
- ✓ Bioinspiration and Smart MEM/NEM Materials for Robots
- ✓ Bionics Robots
- ✓ EEG and EMG Controlled Exoskeleton

Submission of papers: Final Deadline April 15, 2015

Please note when you upload your paper for special session to select:

SS09: Biomimetics and Intelligent Robotics

All the instructions for paper submission are included in the conference website:

<http://iecon2015.com/>

Biography of the Organizer:

Prof Maki K. Habib obtained his D.E.S in Intelligent Robotics from the University of Tsukuba, Japan. He was a selected research scientist at RIKEN, Japan, and senior researcher at RISO-Laboratories, Japan, and visiting researcher at EPFL-Lausanne, Switzerland. He was a visiting expert under Asian Development Bank (ADB), Associate Professor at UTM, Malaysia, and a Senior Manager at MCRIA, Malaysia. Then, he was a senior research scientist with GMD, Japan, leading Telecooperation group, Associate Professor with Monash University and leading the Mechatronics Engineering Programme. He was appointed as a full Professor of Robotics and Mechatronics at Swinburne University. Then, he was an invited Professor at KAIST, Korea, Visiting Professor at Saga University, Japan, and since Sept. 2007 he is a full Professor at AUC. Prof. Habib edited seven books, published 17 book chapters and more than 240 papers at international journals and conferences. His main area of research are focusing on human adaptive and friendly Mechatronics, autonomous navigation, service robots and humanitarian demining, biomimetic robots, telecooperation, distributed teleoperation and collaborative control, wireless sensor networks and ambient intelligence. Prof. Habib organized successful many special issue at international journals and special sessions at international conferences including IEEE IECON.

Keigo Watanabe received B.E. and M.E. degrees in Mechanical Engineering from the University of Tokushima in 1976 and 1978, respectively, and a D.E. degree in Aeronautical Engineering from Kyushu University in 1984. From 1980 to 1985, he was a research associate in Kyushu University. From 1985 to 1990, he was an Associate Professor in the College of Engineering, Shizuoka University. From April 1990 to March 1993 he was an Associate Professor, and from April 1993 to March 1998 he was a full Professor in the Department of Mechanical Engineering at Saga University. From April 1998, he was with the Department of Advanced Systems Control Engineering, Graduate School of Science and Engineering, Saga University. Currently, he is with the Department of Intelligent Mechanical Systems, Graduate School of Natural Science and Technology, Okayama University, Japan. His research interests include intelligent signal processing and control using softcomputing, bio- inspired robotics, and nonholonomic systems.

Prof. Fusaomi Nagata received the B.E. degree from the Department of Electronic Engineering at Kyushu Institute of Technology in 1985, and the D.E. degree from the Faculty of Engineering Systems and Technology at Saga University in 1999. He was a research engineer with Kyushu Matsushita Electric Co. from 1985 to 1988, and a special researcher with Fukuoka Industrial Technology Center from 1988 to 2006. He is currently Professor at the Department of Mechanical Engineering, Faculty of Engineering, Tokyo University of Science, Yamaguchi, Japan. His research interests include industrial robots with ORiN middleware interface and its skillful applications to manufacturing process.