

# Special Session on Bio-inspired optimization techniques: Applications in new product development

Under the framework of the 10<sup>th</sup> International Conference on Intelligent Systems Design and Applications, ISDA'10

November 29 – December 1, 2010, Cairo, Egypt  
Conference web page: <http://cig.iet.unipi.it/isda2010/>

## Session Chair

Hisham M. E. Abdelsalam, Ph.D.

Director, Decision Support and Future Studies Center,

Cairo University, Cairo, Egypt

[h.abdelsalam@fci-cu.edu.eg](mailto:h.abdelsalam@fci-cu.edu.eg)

**Introduction:** Biologically-inspired – or simply bio-inspired – optimization is an umbrella term that covers a wide variety of computational approaches that are based on principles of biological systems such as evolutionary algorithms, ant colony optimization, and swarm intelligence. This class of methods is becoming increasingly important as it has successfully proven to be able to solve complex problem in different fields of today's applications. New product development is one multi-disciplinary area that can benefit – to a great extent – of the applications of these methods. New product development (NPD) is the term used to describe the complete process of bringing a new product or service to market. NPD itself encompasses a large number of disciplines, business, management, production, design, etc. Each of these very different disciplines represents a field of inquiry that focuses on their scope and extended to NPD. New product development (NPD) is the locomotive that pulls any organization forward. Research in this area is starting to be more focused. There is a need to see how quantitative methods and bio-inspired optimization methods can be used in this discipline. The specific objective of this session is to provide researchers and parishioners with up-to-date fruitful applications of bio-inspired optimization methods in different areas of NPD.

### Topics

- Product development management
- Automated design planning
- Design structure matrix
- Particle Swarm Optimization (PSO)
- Ant Colony Optimization
- Design optimization
- Portfolio management

- Knowledge management in NPD
- Optimization of Lean NPD
- Concurrent engineering

### **Instructions for Authors:**

Papers must correspond to the requirements detailed in the (Paper Submission) on the conference flyer <http://cig.iet.unipi.it/isda2010/flyer.pdf> and All accepted papers will be published in the proceedings of ISDA'10 that will be also included in the IEEEExplore digital library. Extended versions of selected papers will be considered for publication

### **Registration Fees:**

All papers must be presented by one of the authors, who must pay the registration fees. <http://cig.iet.unipi.it/isda2010/>

### **Paper Reviewing and Publication**

Submitted papers will be reviewed. Accepted papers, which should not exceed 6 pages (PDF) following the double column IEEE format. All accepted papers will be published in the proceedings of the ISDA'10. Selected papers will be published in special issues of a selection of International Journals (to be announced).

### **Tentative Dates of Submission and Acceptance**

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|--------------------------------------|--------------------|
| • Deadline for paper submission      | June 26, 2010      |
| • Notification of acceptance         | August 14, 2010    |
| • Camera-ready manuscript submission | September 15, 2010 |