

**THEMATIC ISSUE**  
**ON**  
**RESEARCH CHALLENGES IN CONTROL ENGINEERING USING OPTIMIZATION  
TECHNIQUES**

**B. Nagaraj**

**Professor and Head - Karpagam Innovation Centre, Karpagam College of Engineering,  
Coimbatore, India**

**Email: nagaraj@kce.ac.in**

In the new era of technologies the need for an efficient control systems are much needed and it is considered as a prime importance to the industrial development. The process control is multidisciplinary field, that encompasses various engineering or multivariate data analysis. The Significant challenges faced during all these processing is non-linear. This non linearity was overruled by means of Machine learning methods such as Artificial Neural Network and Fuzzy logic, neuro fuzzy etc., as well as an optimization methods such as Genetic Algorithm(GA), Particle Swarm Optimization(PSO), Differential Evolution (DE), Ant Colony Optimization (ACO), Particle Swarm Opti, Artificial Bee Colony (ABC), Firefly Algorithm (FFA) algorithm etc., These methods have been successfully applied to a wide range of benchmark and real-world application problems. But with modern development needs more efficiency this outskirts challenges in the industrial process. The research towards these topics is significant, to overcome the issues.

This thematic issue seeks to bring forward and highlight applications of optimization techniques for real world problems

**SCOPE OF THE THEMATIC ISSUE:**

1. Soft computing based controller system
2. Advanced Closed loop System with intelligent decision methodology
3. Optimized Scheduling
4. Optimized Technique for Control System
5. Machine learning based PID Controller
6. Non Linear Processing
7. Process Optimization
8. Optimized Industrial Control
9. Supervised and Unsupervised controlling
10. Effective process control by non linear processing techniques.

## GUEST EDITORS

1. Prof. Dr. B. Nagaraj, Karpagam College of Engineering, India.
2. Prof. Danilo Pelusi, University of Teramo, Italy.
3. Prof. Dr. Joy I. -Z. Chen, Dayeh University, Taiwan.

## CONTACT INFORMATION

[1] Prof. Dr. B.Nagaraj M.E., Ph.D., MIEEE,  
Head- Karpagam Innovation Centre,  
Karpagam College of Engineering,  
Coimbatore - 641 032  
Tamilnadu, India .

[nagarajice@gmail.com](mailto:nagarajice@gmail.com), [nagaraj@kce.ac.in](mailto:nagaraj@kce.ac.in)

[2] Prof.Danilo Pelusi,  
Dept. of Communication Engineering,  
University of Teramo,  
Italy.

[dpelusi@unite.it](mailto:dpelusi@unite.it)

[3] Prof. Dr. Joy I. -Z. Chen,  
Dept. of Communication Engineering,  
Dayeh University,  
Changhua,  
Taiwan.

[jchen@mail.dyu.edu.tw](mailto:jchen@mail.dyu.edu.tw)

**Prof. Nagaraj Balakrishnan** working as a Professor and Head in the Electronics and Communication Engineering Department at Karpagam College of Engineering, Coimbatore, India. He received his M.E. and Ph.D. degrees from Anna University, and Karpagam University in 2004 and 2010, respectively. In 2005 he joined a Lecturer in Kamaraj College of Engineering , India and he worked there for 12 years (till May 15th 2013) in various positions. His technical expertise and research interests include control system, Automation, soft computing, and high-speed signal processing. He received Best Researcher Award from karunya University for the best research paper in the year 2010. He is the author or coauthor of more than 48 refereed publications in journals and conferences. He applied for 3 patent and is published in Indian Patent Journal. He is a member of various professional bodies like IEEE, MAENG, IACSIT, ISTE and IETE. He is a reviewer for different reputed journals like Elsevier, Wiley, Inderscience etc., and he has been the Guest editor for few special issue in Hindawi, Elsevier, Inderscience, Springer.

**Prof. Danilo Pelusi** Teacher in the Faculties of Communication Sciences and Bioscience and Agro-Food and Environmental Technology, his research is on coding theory and artificial intelligence. Moreover, he is interested in signal processing, patterns recognition, fuzzy logic, neural networks and genetic algorithms. Assistant Professor in Computer Science from 2009 to 2012 at the University of Teramo, he has developed research activity on control systems optimization and database management to the Astronomic Observatory Collurania "V. Cerulli" of Teramo. Reviewer of international journals and conferences, he is Editorial board member of journals "Journal of Universal Computer Science", "International Journal of Advances in Telecommunications, Electrotechnics, Signals and Systems", "Engineering, Technology & Applied Science Research", "Science Journal of Circuits, Systems and Signal Processing". Member of the PhD board in Epistemology of Informatics and Social Changes (University of Teramo), Administrator of the e-learning

platform e-RID of University of Teramo from 2009 to 2012, PhD in Computational Astrophysics, he obtained the degree in Physics from the University of Bologna.

**Prof. Joy I. -Z. Chen** was born in Taichung Taiwan. He received his B.Sc degrees in Electronics Engineering from the National Taiwan Technical University, Taipei, Taiwan, and M.Sc degrees in Electrical Engineering from the Dayeh University, Chunghua, Taiwan, in 1985 and 1995, respectively, and Ph. D. degrees in Electrical Engineering from National Defense University, Tao- Yuan, Taiwan, in 2001. He is currently a full professor of Dep. of Communication Engineering Dayeh University at Changhua Taiwan. Prior to joining the Dayeh University, he worked at the Control Data Company (Taiwan branch) as a Technical Manger since Sep. 1985 to Sep. 1996. His research interests include wireless communications, spread spectrum technical, MIMO systems, OFDM systems, and wireless sensor networks. Dr. Joy I.-Z. Chen has published a large number of SCI/EI Journal papers in the issues addressed physical layer for wireless communication systems. Moreover, he also majors in developing some applications of the IOT (Internet of Thing) techniques and Dr. Joy I.-Z. Chen owned some patents authorized by the Taiwan Intellectual Property Office (TIPO). Dr. Joy I.-Z. Chen has ever been serving as many important positions in International Conferences.

#### **IMPORTANT DATES**

**Submission of manuscripts: 10 April, 2017**

**Notification to authors : 15 July, 2017**

**Final versions due : 15 September, 2017**