

---

## Editorial

---

### Tuan D. Pham\*

School of Computer Science and Engineering,  
Research Center for Advanced Information Science and Technology,  
The University of Aizu,  
Tsuruga, Ikki-machi, Aizu-Wakamatsu,  
Fukushima, 965-8580, Japan  
E-mail: T.Pham@adfa.edu.au  
\*Corresponding author

### Mayumi Oyama-Higa

Department of Systems Innovation,  
Graduate School of Engineering Science,  
Osaka University,  
Toyonaka, Osaka 560-8531, Japan  
E-mail: mhiga@chaotech.org

**Biographical notes:** Tuan D. Pham received his PhD degree from the University of New South Wales (Sydney, Australia) in 1995. His current research areas are image processing, pattern recognition and non-linear dynamical analysis applied to biology and medicine.

Mayumi Oyama-Higa received her Doctorate in Information Engineering in 1991 from Toyohashi University of Technology (Toyohashi, Japan). Her current research interests are non-linear dynamical analysis, including fractals and chaos, of living body systems.

---

This special issue consists of one selected paper directly submitted to the Call for Papers and three selected papers presented at the *2011 International Symposium on Computational Models for Life Science (CMLS-11)* held in Toyama City, Japan during 11–13 October 2011. It is an effort to introduce novel applications of engineering and computer-aided technology methods for solving complex problems in biology, medicine, and health. Authors were requested to extend and further revise their submissions according to the reviewers' comments before the papers can be finally recommended for publication in *International Journal of Computer Aided Engineering and Technology*.

The first paper by Shrestha et al., entitled 'Breast tumour detection by flexible wearable antenna system', presents an interesting idea of applying a wearable antenna system design for tumour detection in microwave breast imaging technologies.

The second paper by Bartolomeo et al., entitled 'Wavelet thresholding technique for sEMG denoising by baseline estimation', applies wavelets to remove noise surface electromyography signals which are important for analysis of activity of human muscles.

The third paper by Sriyanyong entitled 'A comparative study on particle swarm optimisation algorithms for economic dispatch with multiple fuels' presents a modern optimisation technique to study a critical issue in the operational planning of a modern

power system. Simulated results have shown promising results which are more favourable than other conventional methods.

Finally, using finger-tip pulse-wave signals, activities of the cerebral centre can be described as a function of chaotic dynamics in the fourth paper entitled 'Chaos of plethysmogram in relation to scalp-EEG: a model and experiments' by Miao et al.

We thank all the authors for their timely effort in contributing to this special issue. We are grateful to all the reviewers – their generous offer of assistance greatly helped improve the paper quality. We wish to express our gratitude to Yan Luo – the Editor-in-Chief of the journal for his encouragement and support, Barbara Curran – the Journal Manager, and the typesetters for their professional editorial assistance and great effort to make this special issue a valuable contribution to the endeavour of exploring engineering and computer technologies for solving problems in life sciences.