Innovation in Power, Control, and Optimization: Emerging Energy Technologies

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Developing a system that can cope with variations of system or control parameters, measurement uncertainty, and complex, multi-objective optimization criteria is a frequent problem in engineering systems design. The need for a priori knowledge and the inability to learn from past experience make the design of robust, adaptive, and stable systems a difficult task.

Innovation in Power, Control, and Optimization: Emerging Energy Technologies unites research on the development of techniques and methodologies to improve the performance of power systems, energy planning and environments, controllers and robotics, operation research, and modern artificial computational intelligent techniques. Containing research on power engineering, control systems, and methods of optimization, this book is written for professionals who want to improve their understanding of strategic developments in the area of power, control, and optimization.

Topics Covered:
• Electric Distribution Networks
• Genetic Algorithms
• Intelligent Operation and Emergency Control of Power Systems
• Power Grid Analysis and Monitoring
• Power System Stability
• Renewable Energy
• Smart Grid Techniques for Optimized Energy Use
• Soft Computing and Computational Intelligence
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Pandian Vasant was born in Sungai Petani, Malaysia in 1961. Currently, he is a Senior Lecturer of Engineering Mathematics for Electrical & Electronics Engineering Program and Fundamental & Applied Sciences Department at University Teknologi Petronas in Tronoh, Perak, Malaysia. He has graduated in 1986 from University of Malaya (MY) in Kuala Lumpur, obtaining his BSc Degree with Honors (II Class Upper) in Mathematics, and in 1988 also obtained a Diploma in English for Business from Cambridge Tutorial College, Cambridge, England. In the year 2002 he has obtained his MSc (by research) in Engineering Mathematics from the School of Engineering & Information Technology of University of Malaysia Sabah, Malaysia, and has earned a Doctoral Degree (2008) from University Putra Malaysia in Malaysia. After graduation, during 1987-88 he was Tutor in operational research at University Science Malaysia in Alor Setar, Kedah and during from 1989-95 he was teacher of Engineering Mathematics at the same university but with Engineering Campus at Tronoh, Perak. Thereafter during from 1996-2003 he became a lecturer in Advanced Calculus and Engineering Mathematics at Mara University of Technology, in Kota Kinabalu. He became Senior Lecturer of Engineering Mathematics in American Degree Program at Nilai International College, Nilai (MY), during 2003-2004 before taking his present position at University Teknologi Petronas in Tronoh. His main research interests are in the areas of optimization methods and applications to decision making and industrial engineering, fuzzy optimization, computational intelligence, and hybrid soft computing. Vasant has published seven articles in national journals and another fifty in international journals and book chapters, and more than eighty in international and national conference proceedings. He has been serving on TC-9.3 (Developing Countries) as a group initiator and Vice Chair for Asia from September 2004 - July 2011. Currently he's a reviewer for some reputed international journals and conference proceedings.
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