

CALL FOR CHAPTER

Submission Deadline: May 15, 2010

Innovation in Power, Control and Optimization: Emerging Energy Technologies

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Introduction

Many engineering systems, science, financial, business and economics suffer from a problem of developing a system that can cope with variations of system or control parameters, measurements uncertainty and complex multi-objective optimization criteria. 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.

Currently, research on energy resources is of great importance for future oil replacements, particularly in vehicles and other transportation. Computational Intelligence has been proven to provide successful solution of complex optimization problems by fuzzy logic, neural Networks, Evolutionary Algorithms, and Genetic Algorithms with line or pattern searches, Particle Swarm Optimization, Ant Colony Optimization and Hybrid System Optimization in a variety of engineering, science, business, finance, economics, management and hybrid energy resource applications. They include system identification, parameter estimation, multi-objective optimization, robust solutions, adaptive systems, self organization and failure analysis. The goal of these publications is to bring together researchers working 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. The scope of the book chapters is contemporary and original research and educational development in the areas of electrical power engineering, control systems and methods of optimization.

Objective of the Book

This book will aim to provide relevant theoretical frameworks and the latest empirical research findings in these areas. It will be written for professionals who want to improve their understanding of the strategic role in the area of power, control and optimization.

Target Audience

The target audience of this book will be composed of professionals and researchers working in the field of power, control and optimization in various disciplines, e.g. hybrid energy sources, power systems, control systems, smart systems, soft computing, and intelligent technology. Moreover, the book will provide insights and support executives concerned with energy saving and hybrid optimization techniques for different types of engineering, science, economics, management and marketing applications.

Recommended topics include, but are not limited to, the following:

Hybrid renewable energy and energy saving
Micro-hydro, wind, solar, fuel cells and biotechnology
Power systems, transmission, protection and reliability

Economic dispatch, chaos and power quality
Controllers, drives and machine design
Smart system and embedded devices
Mechatronics and dynamic robots
Nano-physics and ferromagnetic material
Soft computing and computational intelligent
Network communication and wireless sensor
Scheduling and assignment problems
Industrial Informatics
Healthcare signal processing
Simulators and software engineering
Modeling, Fuzzy and hybrid optimization
Game theory and continuous optimization
Economics, management and operation research

Submission Procedure

Researchers and practitioners are invited to submit *on or before May 15, 2010*, a 2 or 3 page chapter proposal clearly explaining the mission and concerns of his or her chapter. Authors of accepted proposals will be notified by **May 20, 2010** about the status of their proposals and sent chapter guidelines. Full chapters are expected to be submitted by **August 1, 2010**. All submitted chapters will be reviewed on a double-blind review basis. Contributors may also be requested to serve as reviewers for this project.

Publisher

This book is scheduled to be published by IGI Global (formerly Idea Group Inc.), the publisher of the “Information Science Reference” (formerly Idea Group Reference), “Medical Information Science Reference,” and “IGI Publishing” imprints. For additional information regarding the publisher, please visit www.igi-global.com. This publication is anticipated to be released in 2011.

Important Dates:

May 15, 2010:	Proposal Submission Deadline
May 20, 2010:	Notification of Acceptance
August 1, 2010:	Full Chapter Submission
October 15, 2010:	Review Results Returned
January 2, 2011:	Final Chapter Submission
January 31, 2011:	Final submission deadline

*Inquiries and submissions can be forwarded **electronically** (Word document) or by **mail** to:*

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