# INTERNATIONAL JOURNAL OF ENERGY OPTIMIZATION AND ENGINEERING

## October-December 2013, Vol. 2, No. 4

# **Table of Contents**

Special Issue on Mathematical and Heuristic Modeling and Optimization of Energy Systems, Part 1

## **GUEST EDITORIAL PREFACE**

iv N. I. Voropai, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia

## **Research Articles**

- 1 Optimization Models and Methods Developed at the Energy Systems Institute N.I. Voropai, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia V.I. Zorkaltsev, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia
- 16 Modeling of Nonlinear Dynamic Systems with Volterra Polynomials: Elements of Theory and Applications A. S. Apartsyn, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia S. V. Solodusha, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia V. A. Spiruaev, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia

#### 44 Integral Models of Developing Electric Power Systems

E. V. Markova, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia I. V. Sidler, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia V. V. Trufanov, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia

#### 59 Optimal Expansion and Reconstruction of Heat Supply Systems: Methodology and Practice

V. A. Stennikov, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia T. B. Oshchepkova, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia

- N. V. Stennikov, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia
- 80 New Results in Development of Methods for Optimization of Heat Supply System Parameters and Their Software Implementation
  - E. Å. Barakhtenko, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia
  - T. B. Oshchepkova, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia
  - D. V. Sokolov, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia
  - V. A. Stennikov, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia

### 100 Optimization of Developing Heat Supply System in Competitive Market Environment

- V. A. Stennikov, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia
- O. V. Khamisov, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia
- A. V. Penkovsky, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia

## 120 Methods for Comprehensive Analysis of Heat Supply Reliability

V. A. Stennikov, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia I. V. Postnikov, Energy Systems Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia

## **BOOK REVIEW**

143 Technology and Energy Sources Monitoring: Control, Efficiency, and Optimization Pratiksha Saxena, Department of Applied Sciences, Gautam Buddha University, Greater Noida, Uttar Pradesh, India

#### Copyright

The International Journal of Energy Optimization and Engineering (IJEOE) (ISSN 2160-9500; eISSN 2160-9543), Copyright © 2013 IGI Global. All rights, including translation into other languages reserved by the publisher. No part of this journal may be reproduced or used in any form or by any means without witten permission from the publisher, except for noncommercial, educational use including classroom teaching purposes. Product or company names used in this journal are for identification purposes only. Inclusion of the names of the products or companies does not indicate a claim of ownership by IGI Global of the trademark or registered trademark. The views expressed in this journal are those of the authors but not neccessarily of IGI Global.

The International Journal of Energy Optimization and Engineering is indexed or listed in the following: Bacon's Media Directory; Cabell's Directories; DBLP; Google Scholar; IAOR Online; IndexCopernicus; INSPEC; JournalTOCs; MediaFinder; RePEc; The Standard Periodical Directory; Ulrich's Periodicals Directory