

Table of Contents

Foreword	xix
Preface	xxi
Chapter 1	
Application of Nature-Inspired Algorithms for the Solution of Complex Electromagnetic Problems	1
<i>Massimo Donelli, University of Trento, Italy</i>	
Chapter 2	
A Comprehensive Literature Review on Nature-Inspired Soft Computing and Algorithms: Tabular and Graphical Analyses	34
<i>Bilal Ervural, Istanbul Technical University, Turkey</i>	
<i>Beyzanur Cayir Ervural, Istanbul Technical University, Turkey</i>	
<i>Cengiz Kahraman, Istanbul Technical University, Turkey</i>	
Chapter 3	
Swarm Intelligence for Electromagnetic Problem Solving	69
<i>Luciano Mescia, Politecnico di Bari, Italy</i>	
<i>Pietro Bia, EmTeSys Srl, Italy</i>	
<i>Diego Caratelli, The Antenna Company, The Netherlands & Tomsk Polytechnic University, Russia</i>	
<i>Johan Gielis, University of Antwerp, Belgium</i>	
Chapter 4	
Parameter Settings in Particle Swarm Optimization.....	101
<i>Snehal Mohan Kamalapur, K. K. Wagh Institute of Engineering Education and Research, India</i>	
<i>Varsha Patil, Matoshree College of Engineering and Research Center, India</i>	
Chapter 5	
A Survey of Computational Intelligence Algorithms and Their Applications	133
<i>Hadj Ahmed Bouarara, Dr. Tahar Moulay University of Saida, Algeria</i>	

Chapter 6

- Optimization of Process Parameters Using Soft Computing Techniques: A Case With Wire Electrical Discharge Machining 177
Supriyo Roy, Birla Institute of Technology, India
Kaushik Kumar, Birla Institute of Technology, India
J. Paulo Davim, University of Aveiro, Portugal

Chapter 7

- Augmented Lagrange Hopfield Network for Combined Economic and Emission Dispatch with Fuel Constraint 221
Vo Ngoc Dieu, Ho Chi Minh City University of Technology, Vietnam
Tran The Tung, Ho Chi Minh City University of Technology, Vietnam

Chapter 8

- Speaker Recognition With Normal and Telephonic Assamese Speech Using I-Vector and Learning-Based Classifier 256
Mridusmita Sharma, Gauhati University, India
Rituraj Kaushik, Tezpur University, India
Kandarpa Kumar Sarma, Gauhati University, India

Chapter 9

- A New SVM Method for Recognizing Polarity of Sentiments in Twitter 281
Sanjiban Sekhar Roy, VIT University, India
Marenglen Biba, University of New York – Tirana, Albania
Rohan Kumar, VIT University, India
Rahul Kumar, VIT University, India
Pijush Samui, NIT Patna, India

Chapter 10

- Automatic Generation Control of Multi-Area Interconnected Power Systems Using Hybrid Evolutionary Algorithm 292
Omveer Singh, Maharishi Markandeshwar University, India

Chapter 11

- Mathematical Optimization by Using Particle Swarm Optimization, Genetic Algorithm, and Differential Evolution and Its Similarities 325
Shailendra Aote, Ramdeobaba College of Engineering and Management, India
Mukesh M. Raghuwanshi, Yeshwantrao Chavan College of Engineering, India

Chapter 12

- GA_SVM: A Classification System for Diagnosis of Diabetes 359
Dilip Kumar Choubey, Birla Institute of Technology Mesra, India
Sanchita Paul, Birla Institute of Technology Mesra, India

Chapter 13	
The Insects of Nature-Inspired Computational Intelligence	398
<i>Sweta Srivastava, B.I.T. Mesra, India</i>	
<i>Sudip Kumar Sahana, B.I.T. Mesra, India</i>	
Chapter 14	
Bio-Inspired Computational Intelligence and Its Application to Software Testing.....	429
<i>Abhishek Pandey, UPES Dehradun, India</i>	
<i>Soumya Banerjee, BIT Mesra, India</i>	
Chapter 15	
Quantum-Inspired Computational Intelligence for Economic Emission Dispatch Problem	445
<i>Fahad Parvez Mahdi, Universiti Teknologi Petronas, Malaysia</i>	
<i>Pandian Vasant, Universiti Teknologi Petronas, Malaysia</i>	
<i>Vish Kallimani, Universiti Teknologi Petronas, Malaysia</i>	
<i>M. Abdullah-Al-Wadud, King Saud University, Saudi Arabia</i>	
<i>Junzo Watada, Universiti Teknologi Petronas, Malaysia</i>	
Chapter 16	
Intelligent Expert System to Optimize the Quartz Crystal Microbalance (QCM) Characterization	
Test: Intelligent System to Optimize the QCM Characterization Test	469
<i>Jose Luis Calvo-Rolle, University of A Coruña, Spain</i>	
<i>José Luis Casteleiro-Roca, University of A Coruña, Spain</i>	
<i>María del Carmen Meizoso-López, University of A Coruña, Spain</i>	
<i>Andrés José Piñón-Pazos, University of A Coruña, Spain</i>	
<i>Juan Albino Mendez-Perez, Universidad de La Laguna, Spain</i>	
Chapter 17	
Optimization Through Nature-Inspired Soft-Computing and Algorithm on ECG Process.....	489
<i>Goutam Kumar Bose, Haldia Institute of Technology, India</i>	
<i>Pritam Pain, Haldia Institute of Technology, India</i>	
Chapter 18	
An Overview of the Last Advances and Applications of Artificial Bee Colony Algorithm	520
<i>Airam Expósito Márquez, University of La Laguna, Spain</i>	
<i>Christopher Expósito-Izquierdo, University of La Laguna, Spain</i>	
Chapter 19	
A Survey of the Cuckoo Search and Its Applications in Real-World Optimization Problems	541
<i>Christopher Expósito-Izquierdo, University of La Laguna, Spain</i>	
<i>Airam Expósito-Márquez, University of La Laguna, Spain</i>	
Compilation of References	556
About the Contributors	621
Index	624