Editorial

Jagdish Chand Bansal

Department of Applied Mathematics,
Faculty of Mathematics and Computer Science,
South Asian University,
Room No. 327, Akbar Bhawan,
Chankyapuri – 110021, New Delhi, India
and
ABV-Indian Institute of Information Technology and Management
Gwalior, Room No. E-109,
Morena Road Gwalior (M.P.) – 474015, India
E-mail: jcbansal@gmail.com

Biographical notes: Jagdish Chand Bansal is an Assistant Professor at South Asian University, New Delhi. He has obtained his PhD in Mathematics from IIT Roorkee. Before joining SAU, New Delhi, he has worked at ABV-Indian Institute of Information Technology and Management Gwalior and BITS Pilani also. He has edited special issues of various international journals published by Elsevier, Springer and Inderscience. His primary area of research interest is nature inspired optimisation techniques. He has published 43 research papers in various international journals/conferences. He is the Editor-in-Chief of '*International Journal of Swarm Intelligence* (*IJSI*)' published by Inderscience.

The group behaviour of social creatures has always been a source of inspiration for computer scientists. Collaborative nature of group members exhibits an intelligent behaviour which usually, cannot be obtained by any single individual of the group. This intelligent behaviour commonly, known as swarm intelligence is implemented by computer scientists in the form of computational algorithms. Ant colony optimisation (ACO), particle swarm optimisation (PSO), artificial bee colony (ABC), glow worm swarm optimisation (GSO), firefly algorithm (FA) and bacterial foraging optimisation (BFO) are some such computational algorithms and are called as swarm intelligent algorithms. Swarm intelligent algorithms are probabilistic in nature and are applied to those problems for which a near optimal solution is acceptable in a reasonable time instead of a true optimal solution. Due to this, swarm intelligence has become very popular and useful in last 15 years.

International Journal of Swarm Intelligence (*IJSI*) is a peer reviewed journal devoted to the publication of recent and significant research in the field of swarm intelligence. *IJSI* considers both theoretical development and application related papers. Articles in the first issue of *IJSI* are selected after several rounds of meticulous review process.

On behalf of all the editorial board members, I would like to thank all researchers in the field of swarm intelligence who accepted our invitation to submit their scholarly work for the inaugural issue of *IJSI*. I am thankful to all the editors and the reviewers who supported the journal with their valuable suggestions. I am special thankful to Prof. Kusum Deep (Executive Editor of *IJSI*) for her continuous support to *IJSI*. I express

my sincere thanks to the Inderscience Publishers who provided me the opportunity to edit an international journal with such a reputed publisher.

The inaugural issue of *IJSI* consists of six papers.

The first paper, an application of swarm intelligence for the design of infinite-impulse response (IIR) digital filters by Ranjit Singh Chauhan and Sandeep Kumar Arya presents the application of PSO in designing of IIR digital filters. The paper suggests that PSO approach is a better choice as compare to simulated annealing and genetic algorithm for the design of IIR digital filters. Second paper, performance analysis of FA for data clustering by Hema Banati and Monika Bajaj, exploits the flashing behaviour of fireflies to solve the data clustering problem. Authors claim that the proposed approach FCLUST performs better than PSO and differential evolution. The third paper, FA: recent advances and applications by Xin-She Yang and Xingshi He is a review paper on FA. The paper outlines the fundamentals of FA and then review the latest developments related to FA. The strength of the paper is the explanation of the reasons why FA is so efficient. The fourth paper, a novel swarm optimiser for flexible flow shop scheduling by Manas Ranjan Singh, S.S. Mahapatra and Kaushik Mishra proposes PSO with chaotic mutation for the solution of an NP-hard problem, flexible flow shop scheduling. Authors establish superiority of the proposed approach through intensive experiments over benchmarks as compare to the earlier published results. The fifth paper, solution to dynamic economic dispatch (DED) problem using modified invasive weed optimisation with dual mutation strategy by Renu Sharma, Santanu Kumar Nayak, Pravat Kumar Rout and K.R. Krishnanand proposes invasive weed optimisation approach with dual mutation strategy for solving the DED problem with valve point effect. Authors' claim that the proposed modified invasive weed optimisation is a better approach is supported by experiments. The sixth paper, application of PSO in load frequency control of interconnected thermal-hydro power systems by Ashok Mohan Jadhav, K. Vadirajacharya and Elijah Tintius Toppo study the response of high, medium and low head hydro power systems interconnected with thermal system. PSO algorithm has been used to optimise the gains of PID controller. Results are compared with genetic algorithm.