Barnacles mating optimizer : a new bio-inspired algorithm for solving engineering optimization problems

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ABSTRACT
This paper presents a novel bio-inspired optimization algorithm namely the Barnacles Mating Optimizer (BMO) algorithm to solve optimization problems. The proposed algorithm mimics the mating behaviour of barnacles in nature for solving optimization problems. The BMO is first benchmarked on a set of 23 mathematical functions to test the characteristics of BMO in finding the optimal solutions. It is then applied to optimal reactive power dispatch (ORPD) problem to verify the reliability and efficiency of BMO. Extensive comparative studies with other algorithms are conducted and from the simulation results, it is observed that BMO generally provides better results and exhibits huge potential of BMO in solving real optimization problems.

KEYWORDS
Barnacles optimization algorithm; Benchmarked functions; Loss minimization; Meta-heuristic technique; Optimal reactive power dispatch

ACKNOWLEDGEMENT

This study is supported by the Ministry of Higher Education Malaysia and Universiti Malaysia Pahang under Fundamental Research Grant Scheme
Grant FRGS/1/2017/ICT02/UMP/02/3 & #RDU170105.