

## An Improved VEPSO Algorithm For Multi-Objective Optimisation Problems

### ABSTRACT

Multi-objective optimisation problem is the problem which contains more than one objective that needs to be solved simultaneously. The vector evaluated particle swarm optimisation algorithm is widely used for such purpose, where this algorithm optimised one objective using one swarm of particles by the guidance from the best solution found by another swarm. However, this best solution is only updated when a solution is better with respect to the optimised objective and results in poor performance. Therefore, the vector evaluated particle swarm optimisation algorithm is improved by incorporating the non-dominated solutions for guiding the particle movement during optimisation. The performance of the improved algorithm is analysed with several performance measures and simulated on various test functions. The results suggest that the improved algorithm outperformed the performance of the original algorithm.

**KEYWORDS:** Electronics and Microelectronics, Instrumentation ; Nanotechnology and Microengineering; Innovation/Technology Management; Engineering Economics, Organization, Logistics, Marketing

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