

International Energy Journal, Volume 10, Issue 1, March 2009[HOME](#) | [ABOUT](#) | [LOG IN](#) | [REGISTER](#) | [SEARCH](#) | [CURRENT](#) | [ARCHIVES](#)[Home](#) > [Volume 10, Issue 1, March 2009](#) > **Anitha****FDR PSO-Based Optimization for Non-smooth Functions***M. Anitha, S. Subramanian, R. Gnanadass***Abstract**

In this paper, an improved structure of the standard Particle Swarm Optimization (PSO), called Fitness Distance Ratio PSO (FDR PSO) is proposed to solve non-smooth test functions. In the conventional PSO method, the particle's velocity is updated using cognition and social components. But it suffers from premature convergence. To overcome this drawback, in the proposed algorithm, in addition to cognitive and social component, each particle also learns from the experience of the neighboring particles that have a better fitness than itself. The demonstration of the FDR PSO algorithm was carried out on six bench mark test functions and a practical Optimal Power flow (OPF) problem. The results of the proposed algorithm outperformed the solution obtained through the standard PSO. The minimum solution of OPF problem is also compared with the results obtained through the other optimization methods.

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