
Departmental Seminar

Seminar Title	: Development of Robust Multi-Objective Mayfly Optimization Method for Passive Power Filter Design to Improve Power Quality
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Venue	: Seminar Room (EE-205)
Date and Time	: 26 Jun 2024 (10:30 AM)
Abstract	: Uncertain loads, especially nonlinear loads at the utility end of the electrical distribution network, create harmonics in supply, in addition to the reactive power demand, which is a significant issue as they deteriorate the power quality at the utility side of the electrical power system in many aspects. This paper presents the implementation of a robust multi-objective mayfly optimization (RMOMO) method for the design of single-tuned passive power filters (PPFs) for power quality improvement. Reduction of the total harmonic distortion (THD), improvement of the power factor, reduction of losses, and effective cost management are the major objectives considered for the optimization problem, provided with the reactive power compensation. Simulations are carried out using MATLAB/Simulink software, a comparative analysis is carried out, and the results are presented. The proposed RMOMO method excels many existing optimization methods in terms of convergence, computational complexity, and robustness.