

Editorial Note

I am pleased to present the second issue of Iranian Journal of Electrical and Computer Engineering in its sixth year of publication. Twelve articles are offered in this issue, which contains a Special Section on Power Engineering with seven papers. It starts with a paper by Vijayan et al. which explains a controller for switched reluctance motor drive. In this paper they propose an intelligent self-tuning PI based fuzzy logic controller for this application. They also validate their method using experiments on the DSP based implementation of the method.

The next article presented by Soltani and Farrokh Payam studies a robust nonlinear controller for doubly-fed induction machine drives. They employ a system with two back-to-back voltage source two level SVM-PWM inverters in the rotor circuit, to make the drive system capable of operating in motoring and generating modes below and above synchronous speed.

In the third paper authored by Kannan et al. particle swarm algorithm is applied to optimize the design of a three-phase induction motor. They used this approach to optimize the design of two sample motors with different objectives that reflect the motor's efficiency, active material cost, and performance under starting and full load conditions.

The fourth article presented by Muralidharan et al. develops a Pareto-optimal based method to solve multi-objective economic dispatch problem in a power systems. This approach uses dynamic programming technique to coordinate between three major issues, i.e., cost, emission, and loss to realize a solution with production cost minimization, with an emission constrained, and loss reduced condition.

Justus Rabi et al. investigate the application of genetic algorithm to power quality enhancement in adjustable speed drives systems, in the fifth paper of this section. In fact, the algorithm optimizes a pulse width modulated impedance source inverters by reducing its output's harmonic contents and distortion factors.

The next paper contributed by Benslimane, suggests a strategy for one and two open-switches fault diagnostic and location in two level three phase voltage inverters in order to improve system design, protection, and fault tolerant control. In this study, the condition monitoring mechanism is based on phases currents mean, maximum, and minimum values as fault indicators.

Finally, the Special Section is concluded by an article presented by Bitam-Megherbi and Megherbi which addresses the effect of oil and pressboard paper barriers on negative corona discharge phenomena.

This issue of journal also includes five regular papers. The first two papers are in the field of image processing. The first one is presented by Veerakumar et al. and suggests a method which combines the application of contourlet transform and self-organizing feature map vector quantization for compression of fingerprint images.

Zheng and Daoyin study a method for a method for measuring 3D shape and motion parameters of coronary arteries from X-Ray Images in the next paper.

An analysis method based on differential quadrature approximation is presented to study the heat transfer problem in a paper contributed by Hsu. He adopts differential quadrature approximation and the Chebyshev collocation to convert the partial differential equation that governs heat transfer into a lumped parameter model.

Later, an article entitled genetic based modeling of a multi-agent environment using OWA operator by Nayyeri et al. discusses the application of genetic algorithm for decision making problem in a multi-agent, non-deterministic environment, like soccer field.

Finally, this issue concludes by a paper submitted by Aissat et al. which studies the effect of nitrogen on a laser forming structure with strained quantum well containing GaInAs. It addresses the influence of nitrogen on the conduction band by using the anticrossing band model.

Pleasant Reading,

H. R. Sadegh Mohammadi
Editor-in-Chief