

Special Issue on Electrical Power Engineering

This special issue offers a wide range of case studies, empirical research and professional analysis based on the analysis of relevant sources, to assist the academic teacher, researcher or professional dealing with electric power engineering. The special issue is unique in that it does not focus on a single theme on electric power engineering, but provides insights into the world and practices of co-disciplines that are integrally linked to electric power engineering. This edition contains articles from the field of diagnostics of electrical insulation systems represented by "Dielectric Relaxation Spectroscopy of Modern Hybrid Insulation Systems", where the study includes research on modern insulation systems based on hybrid and non-hybrid nanofluid-paper. Another field is represented by the "Investigation of shielding materials for the purposes of shielding the electromagnetic fields" where investigation of the shielding effectiveness of shielding material HSF 54 and window foil Profilon Antispy was investigated. Power system modelling is represented by "Unsymmetrical Three-phase Power System Model: Design and Application". This paper deals with enhancing the three-phase network model for simulation of both symmetrical and unsymmetrical networks under both normal and faulted operation. The field of renewable energy sources was represented with four papers. First paper deals about Operability satisfaction of energy systems with nuclear power plants at different photovoltaic penetration levels. Second paper is focusing on recent challenges regarding the verification of photovoltaic inverters properties and their compliance with technical requirements. Third deal about the role of flexibility resources in the energy transition and fourth focusing on Data driven additive fault detection of wind turbines. The field of energy accumulation is represented by a paper which deals with energy storage system utilization in distribution power system.

We are very thankful to all the authors and the co-authors for their devotion during the formulation of contributions for this special issue and for sharing their results with the journal. Last but not least, we are sincerely thankful to the editorial board of journal Acta Polytechnica Hungarica for preparing and managing this issue technically, as well as Prof. Imre J. Rudas and Prof. Levente Kovács for supporting the publication of this Special Issue.

Zsolt Čonka

Guest Editor