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Special Issue Reprint

Advances in Electrical Power System Quality

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The following Reprint presents recent advances in the field of power quality, addressing the challenges posed by the integration of renewable sources, the development of electric mobility, and the expansion of smart grids. Modern power systems operate under increasingly dynamic and nonlinear conditions, where maintaining voltage quality, reducing harmonic distortion, and ensuring stability are essential requirements. The papers included in this Reprint focus on innovative control and optimization strategies aimed at improving performance and energy quality. An important role is played by intelligent techniques such as neural networks, fuzzy logic, machine learning, and evolutionary algorithms, which enable adaptive and efficient management of complex energy flows. The Reprint also highlights contributions on the use of active filters, energy management systems, and advanced signal processing methods to reduce disturbances and increase reliability. Both theoretical aspects and practical applications are addressed, relevant to renewable energy systems, electric drives, and modern industrial infrastructures. Overall, this Reprint provides a current perspective on emerging methods that support the development of more efficient, robust, and intelligent power systems.

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