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The optimized PV-UPFC hybrid network for power quality improvement load by an improved distribution algorithm: A best performance from combination of the proposed PV systems and unified power quality controllers

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Combining active filters and renewable sources, in particular photovoltaic systems, allows us to take advantage of power enhancers in delivering high quality pollution free power to consumers. Due to the numerous applications of the solar system, the present study has taken into consideration a different type of its applications, so that by combining UPQC and PV systems in areas nearby loads, which have high potential of radiation, one can improve the quality of electrical energy delivered to consumers. Therefore, the present study aimed to design a proposed system (UPQC-PV) considering control of the active filter, the photovoltaic system's maximum power point tracking and DC-link voltage control strategy. The results obtained from the present study indicated that compensating the parallel active filter leads to remove the unwanted current at the end of the network and also compensating the series active filter leads to compensated voltage drop in the network.

Biography

Milissa Kate is a young and now PhD candidate in Department of Automatics, electronics and Telecommunications, University of Bejaia and received her PhD degree in September, 2016 at the age of 25 years. Her current research interests include Robotics, Automatics, adaptive and robust control, Photovoltaic and its Controls, Artificial Neural Network and Fuzzy Logic Theory. She is author of many research papers published at both International and National journals, Conference proceedings.

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