

Foreword and Editorial

Asia-Pacific Journal of Advanced Research in Electrical and Electronics Engineering

We are very happy to publish this issue of an Asia-Pacific Journal of Advanced Research in Electrical and Electronics Engineering by Global Vision Press.

This issue contains 2 articles. Achieving such a high quality of papers would have been impossible without the huge work that was undertaken by the Editorial Board members and External Reviewers. We take this opportunity to thank them for their great support and cooperation.

The paper “Deterioration Diagnosis Algorithm for Photovoltaic Modules by Considering Electrical Characteristics and Environmental Factors” explored that National policies have been emerging that call for minimizing the built environment's contribution to climate change by means of a comprehensive shift to low-energy buildings powered by renewable energy sources. These policies address other urgent global problems such as depleting energy resources and high energy costs. Under these circumstances, the installations of PV systems which has occupied most one of renewable energy sources have been increasing due to the worldwide interests in eco-friendly and renewable solar energy sources. However, the electrical performance and life span of PV modules installed at outside of buildings has been gradually degraded because the various external environmental conditions such as temperature, humidity, ultra-violet and so on, may cause the deterioration of PV modules. In order to overcome these problems, this paper proposes a diagnosis algorithm for deterioration state of PV modules by considering the electrical characteristics and environmental factors, which is strongly related with annual degradation of PV modules. And also, this paper implements a diagnosis system of PV modules based on the proposed algorithm. From the test results based on the proposed algorithm and diagnosis system of PV modules, it is confirmed that they are practical and useful tool to the performance improvement of PV modules.

In the paper “The Disaggregation Algorithm in Nonintrusive Load Monitoring”, the nonintrusive load monitoring on individual household appliances by using energy disaggregation algorithm is a technique to infer the energy consumption of each appliance by analyzing the changes in power supplied to the household. The technology presented in this study provides consumers with energy-saving methods such as standby power cut-off, device abnormality, and purchase of power-saving products by informing consumers of the energy use and time zones for each electric appliances. In this paper, the real and reactive power quantities are measured from the total amount of power used, and compare them with the previously saved power signature of each household electric device to identify the devices that are being used. In this experiment, the disaggregation accuracy showed good performance at 95.3% on five appliances and seven electric devices.

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**Editors of the November Issue on
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