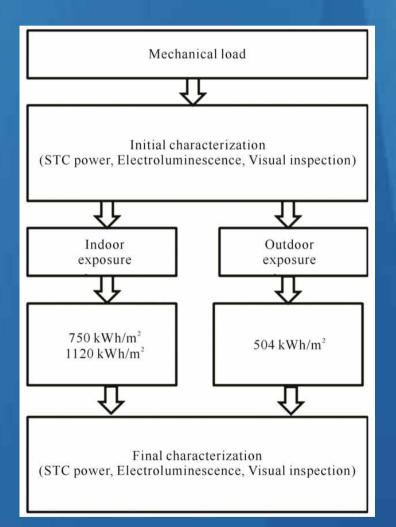


Energy and Power Engineering





www.scirp.org/journal/epe

Journal Editorial Board

ISSN: 1949-243X (Print) ISSN: 1947-3818 (Online) http://www.scirp.org/journal/epe

Editor-in-Chief

Dr. Fermin Mallor

Public University of Navarre, Spain

The University of Hong Kong, China

Tokyo Metropolitan University, Japan

Chinese Society of Electrical Engineering, China

Associate Editor-in-Chief

.

Prof. Giulio Lorenzini

University of Parma, Italy

Editorial Advisory Board

Prof. Ching-Chuen Chan Prof. Ryuichi Yokoyama Prof. Xiaoxin Zhou

Editorial Board

Dr. Kerim Allakhverdiev Dr. Fabio Bisegna Dr. Jesús M. Blanco **Prof. Ho Chang Prof. Jiangping Chen** Prof. Young Nam Chun **Prof. Guoliang Ding Prof. Zhen Fang** Dr. Herbert H. C. Iu Prof. Ruomei Li Prof. Zhengqi Li Dr. Lin Ma Prof. Adnan Midilli Dr. Jingchun Min Dr. Meng Ni Prof. Ping-Feng Pai **Prof. Pucheng Pei** Prof. Marc A. Rosen **Dr. Federico Scarpa** Dr. Pierluigi Siano Dr. Siu-Chung Wong Prof. Changhui Ye Prof. Bo Yu

National Aviation Academy of Azerbaijan, Azerbaijan Sapienza University of Rome, Italy University of the Basque Country, Spain National Taipei University of Technology, Chinese Taipei Shanghai Jiao Tong University, China Chosun University, South Korea Shanghai Jiao Tong University, China Chinese Academy of Sciences, China The University of Western Australia, Australia Chinese Society of Electrical Engineering (CSEE), China Harbin Institute of Technology, China University of Leeds, UK Recep Tayyip Erdogan University, Turkey Tsinghua University, China The Hong Kong Polytechnic University, China National Chi Nan University, Chinese Taipei Tsinghua University, China University of Ontario Institute of Technology, Canada University of Genoa, Italy University of Salerno, Italy The Hong Kong Polytechnic University, China Chinese Academy of Sciences, China China University of Petroleum, China



Table of Contents

Volume 7 Number 8

August 2015

Cost Optimization of Hybrid Solar, Micro-Hydro and Hydrogen Fuel Cell Using Homer Software	
N. Barsoum, P. D. Petrus	337
A Defect Formation as Snail Trails in Photovoltaic Modules	
HC. Liu, CT. Huang, WK. Lee, SS. Yan, FM. Lin	348
An Analysis of the Greenhouse Gas Emissions by the Re-Liquefaction of Boil-Off Gas of LNG Storage Tank	
G. Sun, S. C. Liu, X. Q. Li	354
Polymer Foam Flow in Porous Media under Different Injection Modes	
W. Zhao, H. Q. Cui, K. L. Wang	365

The figure on the front cover is from the article published in Energy and Power Engineering, 2015, Vol. 7, No. 8, pp. 348-353 by Han-Chang Liu, *et al*.

Energy and Power Engineering (EPE)

Journal Information

SUBSCRIPTIONS

The *Energy and Power Engineering* (Online at Scientific Research Publishing, <u>www.SciRP.org</u>) is published monthly by Scientific Research Publishing, Inc., USA.

Subscription rates: Print: \$89 per issue. To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

SERVICES

Advertisements Advertisement Sales Department, E-mail: <u>service@scirp.org</u>

Reprints (minimum quantity 100 copies) Reprints Co-ordinator, Scientific Research Publishing, Inc., USA. E-mail: <u>sub@scirp.org</u>

COPYRIGHT

COPYRIGHT AND REUSE RIGHTS FOR THE FRONT MATTER OF THE JOURNAL:

Copyright © 2015 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY). http://creativecommons.org/licenses/by/4.0/

COPYRIGHT FOR INDIVIDUAL PAPERS OF THE JOURNAL:

Copyright © 2015 by author(s) and Scientific Research Publishing Inc.

REUSE RIGHTS FOR INDIVIDUAL PAPERS:

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

DISCLAIMER OF LIABILITY

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact: E-mail: <u>epe@scirp.org</u>





Editor-in-Chief

Dr. Fermin Mallor

Associate Editor-in-Chief

Prof. Giulio Lorenzini

Editorial Advisory Board

Prof. Ching-Chuen Chan Prof. Ryuichi Yokoyama Prof. Xiaoxin Zhou

Subject Coverage

Energy and Power Engineering

ISSN 1949-243X (Print) ISSN 1947-3818 (Online) http://www.scirp.org/journal/epe

Energy and Power Engineering (EPE), a monthly journal, publishes research and review articles in all important aspects of electric power engineering and other professionals involved in the electric power industry. Both experimental and theoretical papers are acceptable provided they report important findings, novel insights, or useful techniques in these areas.

Public University of Navarre, Spain

University of Parma, Italy

The University of Hong Kong, China

Tokyo Metropolitan University, Japan Chinese Society of Electrical Engineering, China

EPE aims to strengthen relations between the energy sector, research laboratories, and universities. Additionally, accepted ones will immediately appear online followed by printed in hard copy. The topics to be covered by Energy and Power Engineering include, but are not limited to:

- ◆Analysis of Hybrid Generation Systems
- Artificial Intelligence in Complex Power and Energy Systems
- Bio-Energy
- Building Energy Use and Energy Conservation
- ♦ CO₂ and Emission Issues
- \mathbf{O}_2 Capture and Storage
- Conventional Energy Power Generation
- Design and Dimensioning of Power Systems
- Distributed Generation
- Energy and Exergy Analyses
- ◆Energy Policies and Strategies
- Energy Resources
- Energy Resources Assessment
- Energy Storage
- Energy Sustainability
- ◆Gasification Processes and Technologies
- ◆Heat Exchanger
- Hydrogen Energy and Fuel Cells
- ◆Impact of Climate Changes on Energy Systems
- ◆Integrating Renewable Energy to the Power Grid

- ◆International Experiences with Energy Infrastructures
- ◆Investment Planning for Energy Infrastructures
- ◆Organic and Inorganic Photovoltaics
- Petroleum Engineering
- Planning and Operations of Power Systems
- Power Demand Forecasting and Management,
- Power Market
- ◆Power Electronic Engineering
- Power Forecasting from Wind, Solar and Other Renewal Sources of Energy
- •Power System Protection
- ◆Power Transmission and Distribution
- ◆ Reliability Evaluation and Risk Analysis of Power Systems
- ◆Renewable Energy Power Generation
- ♦ Smart Grid
- ◆ Socio-Economic and Power System Management
- Solar Energy Engineering
- Transmission and Capacity Planning
- ♦ Waste Energy Management
- Wind Energy Engineering

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the EPE.

Notes for Intending Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are referred through a peer review process. For more details about the submissions, please access the website.

Website and E-Mailhttp://www.scirp.org/journal/epeEmail: epe@scirp.org

What is SCIRP?

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science with its publication.

What is Open Access?

Art and Design Review

Advances in

ldvances in Biological hemistry Entomology

Applied Mathematics

Engineering

eritti ti

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, worldwide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

• High visibility for maximum global exposure with open access publishing model

Soft

- Rigorous peer review of research papers
- Prompt faster publication with less cost
- Guaranteed targeted, multidisciplinary audience



Website: http://www.scirp.org Subscription: sub@scirp.org Advertisement: service@scirp.org