

**2017 2nd International
Conference on the Applications
of Information Technology in
Developing Renewable Energy
Processes & Systems
(IT-DREPS 2017)**

**Amman, Jordan
6-7 December 2017**



**IEEE Catalog Number: CFP1759U-POD
ISBN: 978-1-5386-1987-2**

**Copyright © 2017 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP1759U-POD
ISBN (Print-On-Demand):	978-1-5386-1987-2
ISBN (Online):	978-1-5386-1986-5

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

Message from the IT-DREPS 2017 General Chair

Message from the President of University of Petra, Prof. Marwan Muwalla

Opening Presentation by Prof. Adnan Badran

Advisory Committee

Conference Committees

Organization Committee

Publication Committee

Publicity Committee

Exhibition Committee

Scientific Committee

IT-DREPS Secretarial

IT-DREPS Support Team

Organizers and Sponsors

Keynote Speech 1: 21st Century Smart Cities: The Challenges for Sustainability, Security, and Privacy
Madjid Merabti

Keynote Speech 2: Distributed energy – the future energy of the world
Tyagunov Mikhail

Keynote Speech 3: Smart Urban Mobility solutions: converting Cities in innovation platforms
Andrés Monzón

Keynote Speech 4: Overview of thin film PV technology roadmap and value for utility scale power plants
Raed Bkayrat

Track 1: ICT Solutions and Support for Smart and Green Cities

Signal Filtering as a Way of Digital Data Processing to the Accuracy Increase of Ultrasonic Liquid Flow Measurement by the Zero-Crossing Method N/A
Sergey Gerasimov, Igor Zhelbakov

Rooftop Rainwater Harvesting System in Amman City 1
Ola M. Surakhi and Ahmad S. Sharieh

EPSSR: Energy Preserving System for Smart Rooms 6
Khalid M.O Nahar, Ra'ed M. Al-Khatib

Network level Quality of Service (QoS) challenges for Smart Grid Measurement and Control systems 12
Kashinath Basu, Ali Maqousi, Tatiana Balikhina, and Frank Ball

Toward an IoT-Enabled Adaptive Interactive Bus Transportation system 17
Muhannad Al-Jabi

- Internet of Things: A Review to Support IoT Architecture's Design 21
Huda Saadeh, Wesam almobaideen and Khair Eddin Sabri
- IoT-Enabled Citizen Attractive Waste Management System 28
Muhammad Al-Jabi and Mohammad Diab
- Clicker: Converting Modern Homes to Smart Modern Homes through the Use of IoT 33
Nawaf Ali, Abdel Kareem Albanna, Mohammed Abu Arqoub, Ghassan Issa
- A Survey of Data Replication Techniques for MANET Databases 38
Inas Abuqaddom and Bassam Hammo
- Matrix Multiplication of Big Data Using MapReduce: A Review 44
Mais Haj Qasem, Alaa Abu Sarhan, Raneem Qaddoura, and Basel A. Mahafzah
- Exploration of Development Projects of Renewable Energy Applications in the ISBSG Dataset: Empirical Study 50
Kenza Meridji, Khalid T. Al-Sarayreh, Mohammad Abu-Arqoub and Wael M. Hadi
- Utilization of RFID Analytics in Assessing Student Engagement 56
Alrence Santiago Halibas, Indu Govinda Pillai and Anju Cherian Matthew
- Smart Grid for increasing the reliability of electric power supply of green cities by detecting electrical equipment faults and defects N/A
Alexander Yu. Khrennikov, Igor N. Zhelbakov, Nikolay M. Aleksandrov and Tanya A. Khrennikova
- System Architecture for Smart Home Meter 61
Tatiana Balikhina, Ali Al Maqousi, AbdElkarim AlBanna and Fadi Shhadeh
- An Adaptive System Architecture for Devising Adaptive User Interfaces for Mobile ERP Apps 66
Khalil Omar and Jorge Marx Gómez
- Vulnerability Scanning of IoT Devices in Jordan Using Shodan 78
Haneen Al-Alami, Ali Hadi and Hussein Al-Bahadili
- A Fair Trust-Based Malicious Node Detection and Isolation Scheme for WSNs 72
Firas Zawaideh, Muhammed Salamah and Hussein Al-Bahadili
- A DNA-Based Smart Meter Authentication Scheme 84
Shaker M. Hussain, Hussein Al-Bahadili, Hadi Al-Saadi

Track 2: Smart Renewable Energy

- SRT-GA: Smart Real-Time System using A Powerful Genetic Algorithm for School Bus Routing Problem 89
Ra'ed M. Al-Khatib and Khalid M.O Nahar
- Distributed Energy System's is the Future of the World's Power Industry 97
Mikhail Tyagunov
- Multi-Agent Approach For Real-Time Optimal Control Of A Microgrid N/A
Amin Kamal Abd Elraheem and Vladimir Shikhin

Track 3: Renewable Energy Sources and Systems (RESS)

- A Survey: Green Energy for Cellular Base Station and Small Cell 101
Mohammad Tala't, Chih-Min Yu, and Kai-Ten Feng
- Online Prediction of Voltage Collapse Using Subset of System Measurements 105
Tara Alzahawi, Mohindar S. Sachdev and G. Ramakrishna
- Optimization the Efficiency of Continuous Solar Adsorption Refrigeration System with Genetic Algorithm 110
Dr. Nibal Fadel Farman, Dr. Zeina Ali Abdul Redha and Shaymaa A.Mahdi
- Development of theoretical bases for solving the problems of power supply system of autonomous rural consumer in Myanmar by using renewable sources of energy 118
Aung Ko, Shestopalova T.A. and Malinin N.K.

Determining the optimal placements of renewable power generation systems using regional geographic information system 123

Michael G. Tyagunov and Zay Yar Lin

Automatic Voltage Regulation and Stability Analysis of Three-phase Self-excited Induction Generator for Wind Energy 129

K. Charafeddine, K. Sangov and S. Tsyruk

Trends in the Development of an Ultrasonic Method For the Liquid Flow Measuring N/A

Sergey Gerasimov, Vladimir Glushnev, Mikhail Panov

Solar Cooling: Influence of the carbon properties and the thickness of carbon bed in the performance of a solar ice maker N/A

Andrei B. Gariaev , Rodolfo M. Echarri , Inna F. Samson and Mariella Mateo

Track 4: Applications of Renewable Energy in Smart and Green Cities

Track 5: Smart and Green Cities Management, Economics, and Future Challenges

Research of influence of integral ADC nonlinearity for a measurement error of active power N/A

Andrey Serov

A method to reduce the measurement error of the active, reactive and apparent power in nonsimultaneous sampling of voltage and current N/A

Andrey Serov and Aleksander Shatokhin

An Evaluation of the University of Petra Green Campus 135

Dr. Nuha El-Khalili, Dr. May Al-Nashashibi

Procedural Model of Software Quality Improvements for Sustainable Applications Process of Renewable Energy Systems (Development & Enhancement) 141

Khalid T. Al-Sarayreh, Kenza Meridji, Ghassan Issa, Mohammad Abu-Arqoub, Wael Hadi

Authors Index