

# **2017 5th International Istanbul Smart Grid and Cities Congress and Fair (ICSG 2017)**

**Istanbul, Turkey  
19-21 April 2017**



**IEEE Catalog Number: CFP17A70-POD  
ISBN: 978-1-5090-5939-3**



## TABLE OF CONTENTS

Authors Index	4
The Message from ICSG Istanbul 2016 Science Committee President	6
Paper and Poster Presentation Sessions	9
A Comprehensive Review of Smart Grid Related Standards and Protocols	12
Artificial Neural Network Based Algorithm for Early Prediction of Transient Stability Using Wide Area Measurements	17
Flexible Transmission Expansion and Reactive Power Planning with Wind Energy Considering N-1 Security	22
Implementation of 1 kV on LV feeders: a smart alternative to MV line investments to solve voltage drop problems at LV systems	27
Condition Monitoring of Circuit Breakers Using Arc Models and Failure Detection Algorithm	32
Hilbert Transform Based Simple Detection and Indice Analyze of Voltage Sags Using Synthetic Data	37
Smart Integrated Adaptive Centralized Controller for Islanded Microgrids under Minimized Load Shedding	41
Simulation Study For Global Neighborhood Algorithm Based Optimal Automatic Voltage Regulator (AVR) System	46
Interpolation and Fraud Detection on Data Collected by Automatic Meter Reading	51
Nash-Equilibrium Electricity Portfolios In the Smart Grid: A Genetic Annealing Solution	56
Optimization of long-term investments of electric distribution systems considering planning metrics	60
Real-Time price savings through price suggestions for the Smart Grid Demand Response model	65
Theoretical and Practical Aspects of Implementing a Low Voltage Express Feeder between Nearby Distribution Transformers to Reduce Annual Losses	70
Sensor Localization in Different Types of Distributed Fields Using Hyperbolic Based Algorithm	75
Energy Consumption Monitoring with Smart Lamp Socket for Smart Grid via M2M Platform	80
Estimation of Short-Term Power Load of a Small House by Generalized Behavioural Learning Method	85



A Novel Efficient PV - Battery Powered LED Lighting Scheme	90
A Power Management Strategy to Enhance the Operation of Active Distribution Networks	95
An Augmented Reality Application for Smart Campus Urbanization: MSKU Campus Prototype	100
Electric Bus Concept Against to Diesel and CNG Bus for Public Transport Operations	105
Switched-capacitors placement in presence of electric vehicles based on the reliability and economy indices	110
Smart Driving in Smart City	115
A Navigation and Reservation Based Smart Parking Platform Using Multi-Objective Optimization for Smart Cities	120
A Fault Location Technique for HVDC Transmission Lines using Extreme Learning Machines	125
Computation of All Stabilizing PI Controller Parameters of Hybrid Load Frequency Control System with Communication Time Delay	130
Smart Meter Tariff Pricing using Load Demand Response Model	135
Design, Analysis and Optimization of 1350 MW Natural Gas Thermal Power Plant	140
A Smart Approach on Collecting Working Condition Data from Home Appliances Under the Field Test	145
Accurate Indoor Localization with Optimized Fingerprinting Algorithm	148
Energy Sharing and Management for Prosumers in Smart Grid with Integration of Storage System	153
Performance Evaluation of Distribution Network in Presence of Plug-in Electric Vehicles Through a New Index	157
Smart Grid Integration of Micro Hybrid Power System Using 6-Switched 3-Level Inverter	161
Technical and Economic Analysis of Energy Storage Systems in Smart Grids	166
The Extensible Analogy for Supporting the Aspects of Smart Cities: Demander and Supplier	171
Use of Shape Memory Alloys as Smart Materials to Harvest Energy Powered by Renewable Energy Resources	175
Score Based Non-Technical Loss Detection Algorithm for Electricity Distribution Networks	180