Publications

A DoS attack intensity-aware adaptive critic design of frequency regulation for EV-integrated power grids

Power coupling analysis and improved decoupling control for the VSC connected to a weak AC grid

Review, Analysis, and Performance Evaluation of the Most Common Four Active Methods for Islanding Detection in Grid-Connected Photovoltaic Systems

Multi-objective operation of microgrids based on electrical and thermal flexibility metrics using the NNC and IGDT methods

Optimal Investment Planning of Bankable Multi-Carrier Microgrid Networks

A data-driven algorithm to detect false data injections targeting both frequency regulation and market operation in power systems

A distributed real-time energy management system for inverter-based microgrids

On wavelet transform based convolutional neural network and twin support vector regression for wind power ramp event prediction

Chance-constrained model predictive control-based operation management of more-electric aircraft using energy storage systems under uncertainty
Data-driven ship berthing forecasting for cold ironing in maritime transportation

A Novel Droop Control Strategy of Reactive Power Sharing Based on Adaptive Virtual Impedance in Microgrids

A novel resilient state of charge balancing method for distributed storage systems based autonomous microgrids

P2P energy trading: Blockchain-enabled P2P energy society with multi-scale flexibility services

Synergizing pico hydel and battery energy storage with adaptive synchronverter control for frequency regulation of autonomous microgrids

Operation Management of More-Electric Aircraft Using Two-stage Stochastic Model Predictive Control

A Comprehensive Review on Small Satellite Microgrids

Decentralized Grid-Forming Control Strategy and Dynamic Characteristics Analysis of High-Penetration Wind Power Microgrids

Distributed Event-Triggered Optimal Control Method for Heterogeneous Energy Storage Systems in Smart Grid

Enhancement of Voltage Regulation Capability for DC-Microgrid Composed by Battery Test System: A Fractional-Order Virtual Inertia Method

Fault-tolerant Sequential MPC for Vertical Switch Open-Circuit Fault and ZSCC Suppression for Parallel T-type Converters

A Fast Power Calculation Algorithm for Three-Phase Droop-Controlled-Inverters Using Combined SOGI Filters and Considering Nonlinear Loads

Hesitant fuzzy for conflicting criteria in multi-objective deployment of electric vehicle charging stations

Implementation of Voltage Sag Relative Location and Fault Type Identification Algorithm Using Real-Time Distribution System Data

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A Novel Fast Transient Stability Assessment of Power Systems Using Fault-On Trajectory

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Dynamic and Steady-State Power-Sharing Control of High-Efficiency DC Shipboard Microgrid Supplied by Diesel Generators

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Optimal Integrated Inner Controller Design in AC Microgrids

Sequential Model Predictive Fault-Tolerance Control for T-Type Three-Level Grid-Connected Converters with LCL Filter

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Intelligent DC Homes in Future Sustainable Energy Systems: When efficiency and Intelligence Work Together

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Five Approaches to Deal With Problem of DC Offset in Phase-Locked Loop Algorithms: Design Considerations and Performance Evaluations

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A Multiagent-based Consensus Algorithm for Distributed Coordinated Control of Distributed Generators in the Energy Internet

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Dynamic Stability Analysis of Autonomous Medium-Voltage Mixed-Source Microgrid

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Load Shifting Control and Management of Domestic Microgeneration Systems for Improved Energy Efficiency and Comfort

Protection of AC and DC Microgrids: Challenges, Solutions and Future Trends

Secondary Frequency and Voltage Control of Islanded Microgrids via Distributed Averaging
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Stability Enhancement Based on Virtual Impedance for DC Microgrids with Constant Power Loads

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考虑电池储能系统荷电状态的有功功率协调控制

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Hybrid Three-Phase/Single-Phase Microgrid Architecture with Power Management Capabilities

Methodologies for Wind Turbine and STATCOM Integration in Wind Power Plant Models for Harmonic Resonances Assessment

Space Vector Modulation for DC-Link Current Ripple Reduction in Back-To-Back Current Source Converters for Microgrid Applications

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Control and Modeling of Push-Pull Forward Three-Level Converter for Microgrid

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Distributed Cooperative Control of Multi Flywheel Energy Storage System for Electrical Vehicle Fast Charging Stations

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A Control Architecture to Coordinate Renewable Energy Sources and Energy Storage Systems in Islanded Microgrids

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A Crossed Pack-to-Cell Equalizer Based on Quasi-Resonant LC Converter with Adaptive Fuzzy Logic Equalization Control for Series-connected Lithium-Ion Battery Strings

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Hierarchical Control with Virtual Resistance Optimization for Efficiency Enhancement and State-of-Charge Balancing in DC Microgrids

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Improved control strategy for the three-phase grid-connected inverter

Intelligent DC Microgrid Living Laboratories - A Chinese-Danish Cooperation Project

Leakage Current Suppression with A Novel Six-Switch Photovoltaic Grid-Connected Inverter

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Faroe Islands Wind-Powered Space Heating Microgrid Using Self-Excited 220 kW Induction Generator

Modeling and Nonlinear Control of Electric Power Stage in Hybrid Electric Vehicle

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Modeling and Nonlinear Control of Fuel Cell / Supercapacitor Hybrid Energy Storage System for Electric Vehicles

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Power flow analysis for DC voltage droop controlled DC microgrids

Secondary Coordinated Control of Islanded Microgrids Based on Consensus Algorithms

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Virtual Impedance Based Stability Improvement for DC Microgrids with Constant Power Loads

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A Distributed Control Strategy for Coordination of an Autonomous LVDC Microgrid Based on Power-Line Signalling

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Modeling, Stability Analysis and Active Stabilization of Multiple DC-Microgrids Clusters

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An Improved Droop Control Method for DC Microgrids Based on Low Bandwidth Communication with DC Bus Voltage Restoration and Enhanced Current Sharing Accuracy

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Line-Interactive UPS for Microgrids

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Control and Analysis of Droop and Reverse Droop Controllers for Distributed Generations

Control of single-phase islanded PV/battery minigrids based on power-line signaling

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Secondary Voltage Unbalance Compensation for Three-Phase Four-Wire Islanded Microgrids

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Co-design of the LCL Filter and Control for Grid-Connected Inverters

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Hierarchical Coordinated Control of Distributed Generators and Active Power Filters to Enhance Power Quality of Microgrids

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Tracking Controller for Intrinsic Output Saturated Systems in Presence of Amplitude and Rate Input Saturations

一种可实现微网系统快速平滑并网的主动同步控制策略

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A parametric study on unbalanced three phase islanded microgrids with inverter interfaced units

Microgrids: Hierarchical Control and an Overview of the Control and Reserve Management Strategies

What are microgrids?

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An Islanding Microgrid Power Sharing Approach Using Enhanced Virtual Impedance Control Scheme

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Supervisory Control for Real Time Reactive Power Flow Optimization in Islanded Microgrids

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Advanced Control Architectures for Intelligent Microgrids—Part II: Power Quality, Energy Storage, and AC/DC Microgrids

Distributed Control to Ensure Proportional Load Sharing and Improve Voltage Regulation in Low-Voltage DC Microgrids

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A generic inertia emulation controller for multi-terminal VSC-HVDC systems

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Analysis, Modelling, and Simulation of Droop Control with Virtual Impedance Loop Applied to Parallel UPS Systems

A New Synchronous Reference Frame-Based Method for Single-Phase Shunt Active Power Filters

A new virtual-flux-vector based droop control strategy for parallel connected inverters in microgrids
A Novel Grid Impedance Estimation Technique based on Adaptive Virtual Resistance Control Loop Applied to Distributed Generation Inverters

A Novel Robust Communication Algorithm for Distributed Secondary Control of Islanded MicroGrids

A parametric study on unbalanced three phase islanded microgrids with inverter interfaced units

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Battery State-of-Charge and Parameter Estimation Algorithm Based on Kalman Filter

Control of single-phase islanded PV/battery streetlight cluster based on power-line signaling

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Distributed Cooperative Secondary Control of Microgrids Using Feedback Linearization

Distributed Secondary Control for DC Microgrid Applications with Enhanced Current Sharing Accuracy

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Modeling, analysis, and design of stationary reference frame droop controlled parallel three-phase voltage source inverters

Modelling, Analysis, and Design of a Frequency-Droop-Based Virtual Synchronous Generator for Microgrid Applications

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Selective compensation of voltage harmonics in grid-connected microgrids

Selective virtual capacitive impedance loop for harmonics voltage compensation in islanded microgrids

Stability Constrained Efficiency Optimization for Droop Controlled DC-DC Conversion System

Voltage-Based Control of a Smart Transformer in a Microgrid

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A Review of Power Electronics Based Microgrids

Cooperative Control with Virtual Selective Harmonic Capacitance for Harmonic Voltage Compensation In Islanded MicroGrids

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Distributed Secondary Control for Islanded MicroGrids – A Networked Control Systems Approach

Grid-connected of photovoltaic module using nonlinear control

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Mitigation of Voltage and Current Harmonics in Grid-Connected Microgrids
Multilayer Control for Inverters in Parallel Operation without Intercommunications

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Online Detection and Estimation of Grid Impedance Variation for Distributed Power Generation

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SoC-Based Droop Method for Distributed Energy Storage in DC Microgrid Applications

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Nonlinear control of single-phase shunt active power filter theoretical analysis of closed-loop performances

Advanced control of interleaved boost converter for fuel cell energy generation system

Intelligent connection agent for three-phase grid-connected microgrids

Adaptive control of interleaved boost converter for fuel cell energy

Fuzzy variable structure control for PWM inverters

A novel improved variable step-size incremental-resistance MPPT method for PV systems

Detailed Operation Scheduling and Control for Renewable Energy Powered Microgrids

Selective compensation of voltage harmonics in an islanded microgrid

Design and analysis of the droop control method for parallel inverters considering the impact of the complex impedance on the power sharing

Hierarchical control of droop-controlled AC and DC microgrids - A general approach toward standardization

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Control of parallel-connected bidirectional AC-DC converters in stationary frame for microgrid application

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Experimental evaluation of voltage unbalance compensation in an islanded microgrid

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Hierarchical Control Scheme for Voltage Unbalance Compensation in Islanded Microgrids

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Hierarchical control of intelligent microgrids

Hierarchical control of power plants with microgrid operation

An integrated multifunction DC/DC converter for PV generation systems

Resonant current regulation for transformerless hybrid active filter to suppress harmonic resonances in industrial power systems

A simple control algorithm to avoid flux density bias in isolated full-bridge topologies

Design of an analog quasi-steady-state nonlinear current-mode controller for single-phase active power filter

Control design guidelines for single-phase grid-connected photovoltaic inverters with damped resonant harmonic compensators

Voltage support provided by a droop-controlled multifunctional inverter

Sliding-mode control for a single-phase AC/AC quantum resonant converter

Selective harmonic-compensation control for single-phase active power filter with high harmonic rejection

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Ride-through improvement of wind-turbines via feedback linearization

Adaptive nonlinear control of multiphase synchronous buck power converters

Analysis of flux density bias and digital suppression strategy for single-stage power factor corrector converter

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Linear current control scheme with series resonant harmonic compensator for single-phase grid-connected photovoltaic inverters

Feedback linearization of direct-drive synchronous wind-turbines via a sliding mode approach

Comparative study of hysteretic controllers for single-phase voltage regulators

Feedback linearization of a single-phase active power filter via sliding mode control

Reactive power compensation for parallel inverters without control interconnections in microgrid

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Droop control method with virtual output impedance for parallel operation of uninterruptible power supply systems in a microgrid

Parallel operation of uninterruptible power supply systems in MicroGrids

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Simple low-cost hysteretic controller for single-phase synchronous buck converters

Designing VRM hysteretic controllers For optimal transient response

Decentralized control for parallel operation of distributed generation inverters using resistive output impedance

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A high-performance DSP-controller for parallel operation of online UPS systems

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A Sliding Mode Control of an Active Power Filter

Non-Linear Control of a Paralleled Half-Bridge Complementary-Control Converter System with a Single-Wire Current Sharing

A wireless load sharing controller to improve dynamic performance of parallel-connected UPS inverters

Simple nonlinear controller to reduce line and load disturbances in HBCC converter

A nonlinear feed-forward control technique for single-phase UPS inverters

Discrete non-linear control of a PWM inverter

Feedback sliding mode control linearization of a single phase active filter

A discrete sliding mode control of a buck-boost inverter

Steady-state invariant-frequency control of parallel redundant uninterruptible power supplies

Integral control technique for single-phase UPS inverter

Parallel operation of charge-controlled-DC-DC converters

Activities
Workshop: IoT-driven eNERgy sysTemS (INET) - Advances and Applications
Amjad Anvari-Moghaddam (Lecturer), Yajuan Guan (Lecturer), Juan Carlos Vasquez Quintero (Lecturer) & Josep M. Guerrero (Lecturer)
30 Jul 2018

**Special Issue “IoT and Energy Internet” (Event)**
Josep M. Guerrero (Editor), Juan C. Vasquez (Editor) & Yajuan Guan (Editor)
26 Jul 2018 → 9 Sep 2019

**Tutorial: Advances in Microgrids Control and Management**
Amjad Anvari-Moghaddam (Lecturer), Qobad Shafiee (Lecturer), Hassan Bevrani (Lecturer) & Josep M. Guerrero (Lecturer)
20 Feb 2018 → 21 Feb 2018

**Tutorial: The Internet of Energy - The Building Block for the Future Smart Grids**
Mehdi Savaghebi (Lecturer), Juan Carlos Vasquez Quintero (Lecturer), Yajuan Guan (Lecturer) & Josep M. Guerrero (Lecturer)
29 Oct 2017

**Special Section on “Energy Internet” (Event)**
Josep M. Guerrero (Editor), Yajuan Guan (Editor), Juan C. Vasquez (Editor) & Kai Sun (Editor)
28 Aug 2017 → 31 Dec 2018

**Keynote: Advanced Control Architectures of DC Microgrids**
Josep M. Guerrero (Lecturer)
10 Jun 2015

**Keynote Plenary session: Future challenges on microgrids and DC homes**
Josep M. Guerrero (Lecturer)
21 May 2014

**Keynote: Microgrid Technologies for Future Electric Vehicle Charging Stations**
Josep M. Guerrero (Lecturer)
16 May 2014

**Keynote: New technologies and future challenges on MicroGrid Research**
Josep M. Guerrero (Speaker)
26 Mar 2014

**Invited presentation: Advanced Control Architectures for Intelligent Microgrids**
Josep M. Guerrero (Lecturer)
25 Aug 2011

**Press clippings**

**40 nye medlemmer optaget i ATV i 2021**
Brian Vejrøm Waehrøn, Josep M. Guerrero, Kirsten Gram-Hanssen, Morten Mattrup Smedskjær, Zhe Chen, Lasse Rosendahl & Katja Hose
21/06/2021
1 item of Media coverage

**55 danske forskere er blandt verdens mest citerede**
Frede Blaabjerg, Josep M. Guerrero, Henrik Lund, Brian Vad Mathiesen, Per Halkjær Nielsen, Xiongfei Wang & Juan C. Vasquez
29/11/2021
1 item of Media coverage
Fornem hæder til AAU-professor
Josep M. Guerrero
06/12/2014
12 items of Media coverage

Forsknning i fremtidens el-systemer
Josep M. Guerrero
03/01/2014
5 items of Media coverage

Mikroanlæg skal sikre bæredygtig energiforsyning
Josep M. Guerrero
28/05/2019
1 item of Media coverage

NAVNE I NOTER
Josep M. Guerrero
25/12/2013
1 item of Media coverage

NAVNE I NOTER
Josep M. Guerrero
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Navne i noter
Josep M. Guerrero
14/12/2014
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Svinghjul kan give billigere strøm til søs
Josep M. Guerrero
12/01/2015
10 items of Media coverage

Syv forskere fra Aalborg Universitet på Clarivates "Highly Cited Researchers List 2017"
Frede Blaabjerg, Josep M. Guerrero, Henrik Lund, Brian Vad Mathiesen, Remus Teodorescu, Christian Torp-Pedersen & Juan Carlos Vasquez Quintero
21/11/2017
1 item of Media coverage

Villum Fonden udvælger 11 nye investigators
Josep M. Guerrero
02/05/2019
1 item of Media coverage

Aalborgprofessor skal udvikle bæredygtig energiforsyning
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Projects

Active filter functionalities for power converters in wind power plants
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ASSET: A holistic and Scalable Solution for Research, Innovation and Education in Energy Transition
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Analysis and Optimization of VSG Stability in Microgrids under Large-Signal Disturbances
Jiang, B., Guerrero, J. M. & Vasquez, J. C.
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Artificial Intelligence based Adaptive Harmonic Suppression Method for VSG in Offshore Wind Power Plants
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MMGrid: Control and Management of Multi-Microgrid Clusters in Taiwan
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SALICRU: DC Voltage Railways Catenary - DCVOLTA
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Design, Control, and Power Management of Small Satellite Microgrids
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VICINITY: Open virtual neighbourhood network to connect IoT infrastructures and smart objects
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REMCE: Renewable Energy based Minigrid Clusters in Ethiopia
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