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## Publications

### **New Horizons for Control and Energy Management of Closed-Ecological Systems: Insights and Future Trends**

Bazmohammadi, N., Madary, A., Vasquez, J. C. & Guerrero, J. M., 11 Sept 2025, (E-pub ahead of print) In: I E E E Industrial Electronics Magazine.

### **A battery degradation-aware energy management system for agricultural microgrids**

Safavi, V., Mohammadi Vaniar, A., Bazmohammadi, N., Vasquez, J. C., Keysan, O. & Guerrero, J. M., 1 Feb 2025, In: Journal of Energy Storage. 108, 115059.

### **Control and Optimization of Hydrogen Hybrid Electric Vehicles Using GPS-Based Speed Estimation**

Mansouri, N., Mnassri, A., Nasri, S., Ali, M., Lashab, A., Vasquez, J. C. & Guerrero, J. M., 1 Jan 2025, In: Electronics. 14, 1, 33 p., 110.

### **A Decentralized Self-synchronizing Method for Cascaded Converter System Based on Analysis of the Existence of Equilibrium Points**

Shi, G., Ou, J., Wu, Z., Zhang, J., Xu, X., Guan, Y. & Guerrero, J. M., 2025, (E-pub ahead of print) In: I E E E Transactions on Power Electronics.

### **A Projected Gradient Descent-Based Distributed Optimal Control Method of Medium-Voltage DC Distribution System Considering Line Loss**

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### **Battery lumped fractional-order hysteresis thermoelectric coupling model for state of charge estimation adaptive to time-varying core temperature conditions**

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### **DC Microgrid Protection: A Comprehensive Review**

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### **Energy Management of a Zero-Emission Hybrid FC/Battery/Ultracapacitor Ship Using Model Predictive Control**

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### **Large-Signal Stability Analysis of Modular Multilevel Converter Base on Mixed Potential Theory**

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**Three-Stage Planning of Networked Microgrids for Electrification of Indonesia Islands Considering Earthquake Scenarios**  
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**An improved progressive window-strong tracking multiple fading algorithm for the state of charge and state of energy co-estimation of lithium-ion batteries under variable temperatures**  
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**Distributed control of virtual energy storage systems for voltage regulation in low voltage distribution networks subjects to varying time delays**  
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## Activities

### **Workshop: IoT-driven eNErgy sysTEms (INET) - Advances and Applications**

Anvari-Moghaddam, A. (Lecturer), Guan, Y. (Lecturer), Quintero, J. C. V. (Lecturer) & Guerrero, J. M. (Lecturer)  
30 Jul 2018

### **Special Issue "IoT and Energy Internet" (Event)**

Guerrero, J. M. (Editor), Vasquez, J. C. (Editor) & Guan, Y. (Editor)  
26 Jul 2018 → 9 Sept 2019

### **Tutorial: Advances in Microgrids Control and Management**

Anvari-Moghaddam, A. (Lecturer), Shafiee, Q. (Lecturer), Bevrani, H. (Lecturer) & Guerrero, J. M. (Lecturer)  
20 Feb 2018 → 21 Feb 2018

### **Tutorial: The Internet of Energy - The Building Block for the Future Smart Grids**

Savaghebi, M. (Lecturer), Quintero, J. C. V. (Lecturer), Guan, Y. (Lecturer) & Guerrero, J. M. (Lecturer)  
29 Oct 2017

### **Special Section on "Energy Internet" (Event)**

Guerrero, J. M. (Editor), Guan, Y. (Editor), Vasquez, J. C. (Editor) & Sun, K. (Editor)  
28 Aug 2017 → 31 Dec 2018

### **Keynote: Advanced Control Architectures of DC Microgrids**

Guerrero, J. M. (Lecturer)  
10 Jun 2015

### **Keynote Plenary session: Future challenges on microgrids and DC homes**

Guerrero, J. M. (Lecturer)  
21 May 2014

### **Keynote: Microgrid Technologies for Future Electric Vehicle Charging Stations**

Guerrero, J. M. (Lecturer)  
16 May 2014

### **Keynote: New technologies and future challenges on MicroGrid Research**

Guerrero, J. M. (Speaker)  
26 Mar 2014

### **Invited presentation: Advanced Control Architectures for Intelligent Microgrids**

Guerrero, J. M. (Lecturer)  
25 Aug 2011

## Press clippings

### **40 nye medlemmer optaget i ATV i 2021**

Wæhrens, B. V., Guerrero, J. M., Gram-Hanssen, K., Smedskjær, M. M., Chen, Z., Rosendahl, L. & Hose, K.  
21/06/2021  
1 item of Media coverage

### **55 danske forskere er blandt verdens mest citerede**

Blaabjerg, F., Guerrero, J. M., Lund, H., Mathiesen, B. V., Nielsen, P. H., Wang, X. & Vasquez, J. C.  
29/11/2021  
1 item of Media coverage

**Computer-professorat med Obelsk Støtte**

Pedersen, G. F., Guerrero, J. M., Birkelund, S. & Grimshaw, M.

30/04/2012

16 items of Media coverage

**Dansk forsker kåret som verdens bedste inden for elektroingeniørvidenskab**

Blaabjerg, F., Guerrero, J. M., Teodorescu, R., Chen, Z., Vasquez, J. C., E. Mogensen, P., Pedersen, K. I. & Popovski, P.

31/03/2023 → 04/04/2023

3 items of Media coverage

**Fornem hæder til AAU-professor**

Guerrero, J. M.

06/12/2014

12 items of Media coverage

**Forskning i fremtidens el-systemer**

Guerrero, J. M.

03/01/2014

5 items of Media coverage

**Mikroanlæg skal sikre bæredygtig energiforsyning**

Guerrero, J. M.

28/05/2019

1 item of Media coverage

**NAVNE I NOTER**

Guerrero, J. M.

25/12/2013

1 item of Media coverage

**NAVNE I NOTER**

Guerrero, J. M.

25/12/2013

1 item of Media coverage

**Navne i noter**

Guerrero, J. M.

14/12/2014

1 item of Media coverage

**Svinghjul kan give billigere strøm til søs**

Guerrero, J. M.

12/01/2015

10 items of Media coverage

**Syv forskere fra Aalborg Universitet på Clarivates "Highly Cited Researchers List 2017"**

Blaabjerg, F., Guerrero, J. M., Lund, H., Mathiesen, B. V., Teodorescu, R., Torp-Pedersen, C. & Quintero, J. C. V.

21/11/2017

1 item of Media coverage

**Villum Fonden udvælger 11 nye investigators**

Guerrero, J. M.

02/05/2019

1 item of Media coverage

## **Aalborg professor skal udvikle bæredygtig energiforsyning**

Guerrero, J. M.

02/04/2019

12 items of Media coverage

## **Projects**

### **Active filter functionalities for power converters in wind power plants**

Guerrero, J. M. (Project Manager), Chaudhary, S. (Project Participant), Teodorescu, R. (Project Participant), Bak, C. L. (Project Participant), Freijedo Fernandez, F. D. (Project Participant), Hoseinzadeh, B. (Project Participant) & Lascu, C. V. (Project Participant)

01/04/2014 → 31/03/2016

### **A Digital Twin framework in Microgrids including Renewable Generation and Energy Storage**

Safavi, V. (PI), Guerrero, J. M. (Supervisor), Vasquez, J. C. (Supervisor) & Bazmohammadi, N. (Supervisor)

01/08/2021 → 22/02/2025

### **ASSET: A holistic and Scalable Solution for Research, Innovation and Education in Energy Transition**

Guerrero, J. M. (PI), Vasquez, J. C. (Project Participant), Akhavan, A. (Project Participant), Nasir, M. (Project Participant) & Guldbæk, B. K. (Project Coordinator)

Horizon Europe

01/05/2019 → 30/04/2021

### **Analysis and Optimization of VSG Stability in Microgrids under Large-Signal Disturbances**

Jiang, B. (PI), Guerrero, J. M. (Supervisor) & Vasquez, J. C. (Supervisor)

01/04/2021 → 21/12/2024

### **DiCyPS: Center for Data-Intensive Cyber-Physical Systems**

Larsen, K. G. (PI), Skou, A. (Col), Pedersen, T. B. (Col), Jensen, C. S. (Col), Kjeldskov, J. (Col), Skov, M. B. (Col), Nielsen, B. (Col), Lahrmann, H. (Col), Bak-Jensen, B. (Col), Guerrero, J. M. (Col) & Raptis, D. (Project Participant)

Innovation Fund Denmark

01/01/2015 → 31/12/2020

### **CROM: Center for Research on Microgrids**

Guerrero, J. M. (PI), Vasquez, J. C. (Project Participant), Tinajero, G. D. A. (Project Participant), Akhavan, A. (Project Participant), Barrios Flores, M. A. (Project Participant) & Pugliese, A. A. (Project Coordinator)

Villum Foundation

01/08/2019 → 31/12/2025

### **MMGrid: Control and Management of Multi-Microgrid Clusters in Taiwan**

Guerrero, J. M. (Project Manager), Dragicevic, T. (Project Participant), Vasquez, J. C. (Project Participant) & Wu, D. (Project Participant)

01/01/2013 → 31/12/2013

### **Control Strategies of Power Electronic Converters for MVDC Shipboard Microgrids**

Xu, L. (PI), Guerrero, J. M. (Supervisor) & Vasquez, J. C. (Supervisor)

15/02/2019 → 14/02/2022

### **Cyber-resilient Control Structures in DC Microgrids with Cyber-Physical Threats**

Basati, A. (PI), Guerrero, J. M. (Supervisor) & Vasquez, J. C. (Supervisor)

01/11/2019 → 31/10/2023

### **Cyber Security based Distributed Control for DC Microgrids and Multiple Microgrids Clusters**

Tan, S. (PI), Guerrero, J. M. (PI) & Vasquez, J. C. (PI)

15/12/2018 → 14/12/2021

**SALICRU: DC Voltage Railways Catenary - DCVOLTA**

Guerrero, J. M. (PI), Vasquez, J. C. (CoI), Barrios Flores, M. A. (Project Participant), Golestan, S. (Project Participant) & Guldbæk, B. K. (Project Coordinator)

Salicru S.A.

01/07/2021 → 31/12/2022

**Decentralized Adaptive Protection Schemes in Micro Grid Clusters**

De La Cruz, J. (PI), Guerrero, J. M. (Supervisor) & Vasquez, J. C. (Supervisor)

01/11/2021 → 31/10/2024

**Design, Control, and Power Management of Small Satellite Microgrids**

Yaqoob, M. (PI), Guerrero, J. M. (Supervisor) & Vasquez, J. C. (Supervisor)

01/03/2019 → 28/02/2022

**Distributed Converter And MicroGrid Advanced Control Algorithm Project**

Guerrero, J. M. (PI), Vasquez, J. C. (CoPI), Akhavan, A. (Project Participant), Wei, B. (Project Participant) & Guldbæk, B. K. (Project Coordinator)

Huawei Technologies Co., Ltd.

25/09/2018 → 31/05/2020

**Dynamic Performance and Power Quality of Large-Scale Grid-Connected Wind Power Plants**

Ullah, M. (PI), Guerrero, J. M. (Supervisor), Vasquez, J. C. (Supervisor) & Guan, Y. (Supervisor)

01/03/2023 → 28/02/2026

**Efficiensea**

Guerrero, J. M. (Project Manager), Dragicevic, T. (Project Participant), Meng, L. (Project Participant), Vasquez, J. C. (Project Participant) & Miltersen, A. (Project Coordinator)

Innovation Fund Denmark

16/03/2015 → 15/03/2018

**Energy Management System for Renewable Energy Sources Integrated Microgrids**

Wu, J. (PI), Guerrero, J. M. (Supervisor) & Vasquez, J. C. (Supervisor)

15/02/2021 → 14/02/2024

**Energy Management System in Shipboard Microgrid**

Othman, M. B. (PI), Anvari-Moghaddam, A. (Supervisor) & Guerrero, J. M. (Supervisor)

20/04/2016 → 01/05/2019

**Energy Management Systems based on Internet of Things/ Energy Internet for Smart Homes**

Arbab Zavar, B. (PI), Guerrero, J. M. (Supervisor) & Vasquez, J. C. (Supervisor)

01/10/2018 → 30/09/2021

**Flexible electric vehicle charging infrastructure (Flex-ChEV)**

Guerrero, J. M. (Project Manager), Dragicevic, T. (Project Participant), SUN, B. (Project Participant), Schaltz, E. (Project Participant), Vasquez, J. C. (Project Participant) & Shafiee, Q. (Project Participant)

01/03/2014 → 29/02/2016

**Future Residential LVDC Power Distribution Architectures**

Vasquez, J. C. (Project Manager) & Guerrero, J. M. (Project Participant)

01/01/2014 → 31/12/2014

**HeatReFlex: Green and Flexible District Heating/Cooling**

Anvari-Moghaddam, A. (PI), Guerrero, J. M. (Project Participant), Nami, H. (Project Participant) & Mohammadiatloo, B. (Project Participant)

Danida Fellowship Centre

01/05/2019 → 30/04/2022

**Harmonic Control Architectures for Virtual Synchronous Generator-based Distributed Generation Systems**

Li, S. (PI), Guerrero, J. M. (Supervisor) & Vasquez, J. C. (Supervisor)

01/04/2021 → 30/09/2024

**HECATE: HECATE - Hybrid Electric Regional Aircraft Distribution Technologies**

Guerrero, J. M. (PI), Vasquez, J. C. (CoPI), Wei, B. (Project Participant), Bazmohammadi, N. (Project Participant), Lashab, A. (Project Participant) & Pugliese, A. A. (Project Coordinator)

Horizon JU Innovation Action

01/01/2023 → 31/12/2025

**iDClab: Intelligent DC Microgrid Living Lab**

Guerrero, J. M. (PI), Vasquez, J. C. (Project Participant), Diaz, E. R. (Project Participant) & Golestan, S. (Project Participant)

Det Strategiske Forskningsråd

01/01/2014 → 31/12/2017

**DiCyPS: IT-Infrastructures for Control, Optimization and Management in Energy Systems**

Guerrero, J. M. (Project Participant), Anvari-Moghaddam, A. (Project Participant), Vasquez, J. C. (Project Participant), Bak-Jensen, B. (Project Manager) & Guldbæk, B. K. (Project Coordinator)

Innovation Fund Denmark

01/01/2015 → 31/12/2020

**Large-Scale Integration of Renewable Energy Power Plants and Flexible Demand in the Egyptian Electric Grid**

Ali, H. (PI), Guerrero, J. M. (Supervisor) & Vasquez, J. C. (Supervisor)

01/04/2021 → 30/09/2024

**LastWind: Large-Scale Integration of Wind Power Generation in Ethiopia - LastWind**

Guan, Y. (PI), Guerrero, J. M. (Project Participant), Vasquez, J. C. (Project Participant), Javidsharifi, M. (Project Participant), Yu, Y. (CoPI), Kang, W. (Project Participant) & Pugliese, A. A. (Project Coordinator)

Danida Fellowship Centre

01/08/2023 → 31/07/2026

**MICROGRID TECHNOLOGIES FOR FUTURE OFFSHORE WIND POWER PLANTS**

Yu, Y. (PI), Guerrero, J. M. (Supervisor) & Vasquez, J. C. (Supervisor)

01/02/2020 → 31/01/2023

**TECH-IN: Microgrid Technologies for Remote Indonesian Islands**

Vasquez, J. C. (PI), Guan, Y. (Project Participant), Vasquez, J. C. (Supervisor), Guerrero, J. M. (Project Participant) & Pugliese, A. A. (Project Coordinator)

Danida Fellowship Centre

01/05/2021 → 30/11/2024

**MeTER\_Demo: Microgrid Technology Research and Demonstration**

Guerrero, J. M. (Project Manager), Wu, D. (Project Participant), Guan, Y. (Project Participant), Vasquez, J. C. (Project Participant) & Savaghebi, M. (Project Participant)

01/04/2014 → 31/03/2017

**HyMG: Microgrid technology research based on wind/PV/storage hybrid system**

Guerrero, J. M. (Project Manager), Vasquez, J. C. (Project Participant) & Wu, D. (Project Participant)

01/01/2013 → 31/12/2013

**Modeling of Solar Cells and Environmental Conditions for Space Microgrids**

Raya-Armenta, J. M. (PI), Guerrero, J. M. (Supervisor), Vasquez, J. C. (Supervisor) & Saez, D. (Supervisor)

01/01/2019 → 31/12/2021

**NEST: National Research Infrastructure Roadmap**

Sahlin, S. L. (PI), Vasquez, J. C. (CoPI), Barrios Flores, M. A. (Project Applicant), Tinajero, G. D. A. (Project Participant), Arbab Zavar, B. (Project Participant), Guerrero, J. M. (Project Participant) & Pugliese, A. A. (Project Coordinator)  
Nationalt Udvalg for Forskningsinfrastruktur (NUFI)  
01/01/2024 → 31/12/2026

**Flywheel : Off-Shore Application of the Flywheel Energy Storage**

Guerrero, J. M. (Project Manager), Dragicevic, T. (Project Participant) & Anvari-Moghaddam, A. (Project Participant)  
Den Danske Maritime Fond  
13/11/2014 → 28/02/2016

**OFFSHORE WIND FARMS LARGE-SCALE INTEGRATION IN TURKEY**

Chaudhary, S. (Project Participant), Guerrero, J. M. (PI), Vasquez, J. C. (Project Coordinator), Tinajero, G. D. A. (Project Participant) & Høyer, M. (Project Participant)  
01/06/2020 → 31/05/2023

**VICINITY: Open virtual neighbourhood network to connect IoT infrastructures and smart objects**

Guan, Y. (Project Participant), Vasquez, J. C. (Project Participant), Guerrero, J. M. (Project Coordinator) & Miltersen, A. (Project Coordinator)  
European Commission  
01/01/2016 → 31/12/2019

**Photovoltaic Energy Supply for future Energy Neutral Base Stations**

Javidsharifi, M. (PI), Kerekes, T. (Supervisor) & Guerrero, J. M. (Supervisor)  
01/07/2019 → 03/07/2022

**Planning and Operational Management Systems for Resilient Microgrids in Remote and Islanded Communities Under Natural Disasters (TECH-IN: Microgrid Technologies for Remote and Island Communities under Natural Disasters)**

Ali, M. (PI), Guerrero, J. M. (Supervisor), Vasquez, J. C. (Supervisor) & Guan, Y. (Supervisor)  
01/01/2022 → 01/02/2025

**PLANNING, CONTROL, AND ENERGY MANAGEMENT OF SPACE MULTI-MICROGRID CLUSTERS FOR SPACE LUNAR BASES**

Saha, D. (PI), Guerrero, J. M. (Supervisor) & Vasquez, J. C. (Supervisor)  
01/02/2020 → 31/07/2023

**Power management systems for shipboard ZED-based Multi-Microgrid Clusters**

Xie, P. (PI), Guerrero, J. M. (Supervisor) & Vasquez, J. C. (Supervisor)  
15/12/2018 → 14/12/2021

**REMCE: Renewable Energy based Minigrid Clusters in Ethiopia**

Chaudhary, S. (PI), Golestan, S. (Project Participant), Guan, Y. (Project Participant), Wu, Y. (Project Participant), Vasquez, J. C. (Supervisor), Guerrero, J. M. (Supervisor) & Pugliese, A. A. (Project Coordinator)  
Danida Fellowship Centre  
01/05/2021 → 31/12/2024

**REConnect: Renewable Energy Converters Connected in Parallel**

Guerrero, J. M. (PI), Vasquez, J. C. (CoI), Guan, Y. (Project Applicant) & Guldbæk, B. K. (Project Coordinator)  
ReConvert BV  
01/08/2020 → 15/12/2020

**REConnect: Renewable Energy Converters Connected to Grid**

Guan, Y. (PI), Guerrero, J. M. (Project Coordinator), Vasquez, J. C. (Project Manager), Zwam, A. V. (Project Coordinator), Meersman, B. (Project Participant) & Oostveen, B. (Project Participant)  
01/08/2020 → 31/12/2020



**SYNCHRONY: SYNCHRONY - Synchronization of Parallel Single-Phase Inverters with Power Sharing Control**

Guerrero, J. M. (PI), Vasquez, J. C. (CoPI), Golestan, S. (Project Participant), Akhavan, A. (Project Participant), Barrios Flores, M. A. (Project Participant), Guldbæk, B. K. (Project Coordinator) & Pugliese, A. A. (Project Coordinator)  
Private funding

01/06/2020 → 31/05/2024

**The Energy Internet - Integrating Internet of Things into the Smart Grid**

Vasquez, J. C. (PI), Guerrero, J. M. (CoI), Gui, Y. (Project Participant), Diaz, E. R. (Project Participant) & Garcia, E. J. P. (Project Participant)

Aalborg University

01/01/2017 → 31/12/2019

**To Enhance the Fault Ride Through Capability of Doubly Fed Induction Generator using Direct Matrix Converter for Wind Turbines**

Asim, A. (PI), Vasquez, J. C. (Supervisor), Guan, Y. (Supervisor) & Guerrero, J. M. (Supervisor)

01/10/2023 → 30/09/2026

**TROY: UPS SLC-TROY Project**

Guerrero, J. M. (Project Manager), Vasquez, J. C. (Project Participant), Zhang, C. (Project Participant), Wei, B. (Project Participant) & Gui, Y. (Project Participant)

Others

01/04/2015 → 01/06/2017