Sahin Gullu

Assistant Professor

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Education

University of Central Florida, Orlando, FL, USA Aug 2018 – May 2024
Ph.D. in Electrical Engineering
Academic Advisor: Issa Batarseh
Dissertation: Analysis, Design and Optimization of Grid-Tied Photovoltaic Energy System

Florida Institute of Technology, Melbourne, FL, USA Aug 2015 – Dec 2017
Master of Science in Electrical Engineering
Academic Advisor: Josko Zec
Thesis: Comparison of Reference Signal Received Power Measurements between
Cell Phone and Scanning Receiver in LTE

Bulent Ecevit University, Zonguldak, Turkey Sept 2008 – June 2013
Bachelor's in Electrical and Electronics Engineering
Academic Advisor: Rıfat Hacıoğlu
Dissertation: Motors and Motor Drivers in Solar Powered Cars

Academic Experience

Nevsehir Haci Bektas Veli University
Assistant Professor Sept 2024 – present

University of Central Florida
Graduate Teaching Assistant (GTA) Aug 2021 – May 2024

Honors & Awards

Best GTA Award, Department of Electrical and Computer Engineering, University of Central Florida	May 2024
Best GTA Award, Department of Electrical and Computer Engineering, University of Central Florida	May 2023
Best Paper Awards, IEEE 12th International Renewable Energy Congress	Oct 2021
Scholarship for Graduate Studies in USA, The Ministry of National Education	Dec 2013
Third in Rankings, College of Engineering, Bulent Ecevit University	June 2013
Second in Rankings, Department of Electrical and Electronics Engineering, Bulent Ecevit University	June 2013

Research Interests

Renewable Energy Integration
Photovoltaic Energy Systems
Grid-Forming (GFM) Inverters Control Methods
Battery Management Systems
Power Electronics
Power Systems

Courses Taught

EEM-101 Computer-Aided Engineering Drawing
EEM-102 Fundamentals of Electrical and Electronics Engineering II
EEM-103 Fundamentals of Electrical and Electronics Engineering I
EEM-208 Technical English
EEM-308 Industrial Electronics
EEM-401 Design in Electrical and Electronics Engineering
EEM-404 Graduation Project
EEM-407 Protection in Power Systems

Publications

Journals

[1] M. O. Kok, and **S. Gullu**, “A 2-GHz Low-Noise Amplifier Using Fully Distributed Microstrip Matching Networks,” Electronics, vol. 15, no. 3, pp. 588, January 2026, https://doi.org/10.3390/electronics15030588

[2] **S. Gullu**, M. O. Kok, and K. Alluhaybi, “Performance Analysis and Predictive Modeling of Microinverters Under Varying Environmental Conditions,” Electronics, vol. 15, no. 2, pp. 472. January 2026, https://doi.org/10.3390/electronics15020472.

[3] **S. Gullu**, M. Nilian, and I. Batarseh, “Enhanced droop control for off-grid and grid-tied scenarios in renewable energy systems,” Int J Energy Studies, vol. 9, no. 4, pp. 745-773, December 2024, doi: 10.58559/ijes.1412839.

[4] **S. Gullu**, A. Djaho, A. Mensah, and I. Batarseh, “Demonstration Project: 1.86 MWH Battery Energy Storage System and 540 KVA Inverter Integration,” Electronics, vol. 13, no. 13, pp. 2596, July 2024, https://doi.org/10.3390/electronics13132596.

[5] **S. Gullu**, I. Batarseh, and F. Alaql, “Design and optimization of battery and thermal management system for AC photovoltaic energy module”, Int J Energy Studies, vol. 9, no. 1, pp. 69-92, March 2024, doi: 10.58559/ijes.1426354.

Books and Books’ Chapters

[6] **S. Gullu**, "Yenilenebilir Enerji Sistemlerinin Üç Fazlı Şebekeye Bağlantısı İçin Geliştirilmiş Bir Kontrol Yöntemi," in Elektrik-Elektronik Ve Haberleşme Mühendisliğinde Güncel Çalışmalar, Efe Akademi, 2024, pp. 117-136.

[7] **S. Gullu**, and E. Eyceyurt, "An Energy Storage Monitoring System in PV Energy System," in Green Revolutionary Technologies, Iksad Publishing House, 2024, pp. 79-90.

[8] E. Eyceyurt and **S. Gullu**, "Energy Efficiency Strategies Using Artificial Intelligence," in Green Revolutionary Technologies, Iksad Publishing House, 2024, pp. 91-104.

Conferences

[9] A. A. Pise, N. Kutkut, M. Nilian, I. Batarseh and **S. Gullu**, "Analysis and Design of a Dual Active Bridge Converters with Stacked Secondary Phases for High Voltage Gain Applications," 2025 IEEE 19th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG), Antalya, Turkiye, 2025, pp. 1-6, doi: 10.1109/CPE-POWERENG63314.2025.11027292.

[10] M. Nilian, R. Rezaii, M. Safayatullah, **S. Gullu**, F. Alaql and I. Batarseh, "A Three-port Dual Active Bridge Resonant Based with DC/AC Output," 2023 IEEE Energy Conversion Congress and Exposition (ECCE), Nashville, TN, USA, 2023, pp. 2537-2541, doi: 10.1109/ECCE53617.2023.10362035.

[11] **S. Gullu**, I. Batarseh, M. Salameh and S. Al-Hallaj, "Optimized Photovoltaic Energy System for Tier 2 Electricity Access," 2023 IEEE Conference on Power Electronics and Renewable Energy (CPERE), Luxor, Egypt, 2023, pp. 1-6, doi: 10.1109/CPERE56564.2023.10119597.

[12] S. Ghosh, A. Alhatlani, **S. Gullu** and I. Batarseh, "MPPT of Dual-PV LLC Converter Using Fuzzy ANFIS Hybrid Interface," 2022 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), Jaipur, India, 2022, pp. 1-6, doi: 10.1109/PEDES56012.2022.10080322.

[13] **S. Gullu** et al., "Advanced Systems Integration of 540 KVA Inverter and 1.86 MWh Battery Energy Storage System for Microgrid Application: A Case Study," 2022 13th International Renewable Energy Congress (IREC), Hammamet, Tunisia, 2022, pp. 1-5, doi: 10.1109/IREC56325.2022.10002117.

[14] **S. Gullu**, M. T. Elrais, I. Batarseh, M. Salameh and S. Al-Hallaj, "High Voltage Battery Management System Hardware and Software Design for Photovoltaic Energy Systems," 2022 IEEE 7th Southern Power Electronics Conference (SPEC), Nadi, Fiji, 2022, pp. 1-5, doi: 10.1109/SPEC55080.2022.10058391.

[15] F. Alaql, R. Rezaii, A. Alhatlani, **S. Gullu**, M. Safayatullah and I. Batarseh, "Multi-Mode Rectifier-Based Dual-Input LLC Converter for Wide Voltage PV Applications," 2022 IEEE Energy Conversion Congress and Exposition (ECCE), Detroit, MI, USA, 2022, pp. 1-5, doi: 10.1109/ECCE50734.2022.9948025.

[16] **S. Gullu**, J. Phelps, I. Batarseh, K. Alluhaybi, M. Salameh and S. Al-Hallaj, "Smart Battery Management System for Integrated PV, Microinverter and Energy Storage," 2021 12th International Renewable Energy Congress (IREC), Hammamet, Tunisia, 2021, pp. 1-6, doi: 10.1109/IREC52758.2021.9624748.

[17] M. Safayatullah, S. Ghosh, **S. Gullu** and I. Batarseh, "Model Predictive Control for Single-Stage Grid-Tied Three-Port DC-DC-AC Converter Based on Dual Active Bridge and Interleaved Boost Topology," IECON 2021 – 47th Annual Conference of the IEEE Industrial Electronics Society, Toronto, ON, Canada, 2021, pp. 1-6, doi: 10.1109/IECON48115.2021.9589546.

[18] F. Alaql, R. Rezaii, **S. Gullu**, M. T. Elrais and I. Batarseh, "A Switchable Rectifier-based LLC Resonant Converter for Photovoltaic Applications," 2021 IEEE Energy Conversion Congress and Exposition (ECCE), Vancouver, BC, Canada, 2021, pp. 2093-2098, doi: 10.1109/ECCE47101.2021.9595746.