Sukumar Kamalasadan, Ph.D., IEEE Fellow

W S Lee Distinguished Scholar Professor in Electrical Engineering (2023-now)
Duke Energy Distinguished Professor (2019-2022)
Research Coordinator, Department of Electrical and Computer Engineering (2021-now)
Director, Power, Energy, and Intelligent Systems Laboratory (2010-now)
Lead and Technical Director for the DoE Project - RedisPV (2019-now)
Member, Energy Production and Infrastructure Center (2010-now)
Member, Center for Advanced Power Engineering Research https://caper-usa.com/

Department of Electrical and Computer Engineering, The University of North Carolina at Charlotte
9201 University City Blvd., Charlotte, NC 28223, 0001
Webpage: https://coefs.uncc.edu/skamalas
Research Lab Website: https://peisl.charlotte.edu
Email: skamalas@charlotte.edu

Major Distinguished Scholarly Accomplishments (2023-2026)

Highlights shows the last three years contributions.

Research

- Elected as an Institute of Electrical and Electronics Engineers (IEEE) Fellow "for contributions to the management and control of electric grids with inverter-based resources." This distinction is awarded to no more than 0.1% of IEEE's voting membership annually (approximately 300–350 individuals worldwide out of over 500,000 members).
- Named to the Stanford/Elsevier Top 2% Scientists List (both Career and Single-Year Impact) in 2022, 2023, 2024, and 2025 (Rank in Subfield 1: 1542 out of 125,178 researchers), recognizing sustained global research impact.
- Served as Principal Investigator (PI) for 6 externally funded grants over the past three years totaling $3.6 million, with individual contributions of $1.1 million. Funding sources include NC Innovation, Siemens Energy, and the U.S. Department of Energy. An additional $300,000 is currently under review. These projects advance grid modernization, inverter-based resource integration, and workforce development.
- Published more than 61 peer-reviewed research articles in the past three years, including 30 Transaction papers, 31 conference papers, and 3 conference proceedings, significantly advancing scholarship in power and energy systems.
- Two patents were granted (2024 and 2025), both licensed, with resulting technologies currently being tested at Duke Energy. This demonstrates successful technology transfer and measurable economic impact for the state of North Carolina.
- Received the Ralph Lee Prize Paper Award, IEEE IAS, 2024, for the paper entitled "Oscillation Identification and Frequency Damping Controller Design for Battery Energy Storage System Using Subspace Identification." This award represents one of the highest technical recognitions within IEEE IAS.
- Received the inaugural NC Innovation Award, selected from leading proposals across UNC universities for successfully translating laboratory research into field-deployable technologies.
- Contributed to the development of "IEEE Guide for the Design of Microgrid Protection Systems," IEEE Std 2030.12-2025, pp. 1–75, 23 Oct. 2025, doi: 10.1109/IEEESTD.2025.11217453. This four-year collaborative effort culminated in a nationally adopted IEEE Guide. Link
- Contributed to multiple IEEE Technical Reports, including:
  - Innovative Teaching Methods for Modern Power and Energy Systems (PES-TR 120), 114 pages, 2024. Link
  - Practical Applications of Artificial Intelligence and Machine Learning in Power System Protection and Control,(PES-TR 112), 112 pages, 2023. Link
  - Forced Oscillations in Power Systems, (PES-TR 110), 64 pages, 2023. Link
- Three press releases and two television interviews highlighted the societal and industry impact of the research program. Go to the Section

Teaching and Mentorship

- Directly supervised 16 Ph.D. dissertations, with 8 students graduated and currently mentoring 8 graduate students. This reflects sustained leadership in doctoral education and workforce development in power engineering.

- Provided additional mentorship through exchange scholar supervision, dissertation committee service, and external evaluations for 5 students and 2 international faculty members.
- Invited to teach a one-week international course titled *Modeling and Management of Inverter-Based Resource (IBR) Integrated Electric Grid* (July 2025) through the Global Initiative of Academic Network (GIAN), Government of India, a Ministry of Education initiative that hosts leading international faculty at premier institutions.
- Appointed CPRI Visiting Chair Professor, Indian Institute of Science (IISc), Bangalore, India (2024–2025), a competitive visiting position awarded to distinguished researchers in power engineering. Delivered a keynote address at a three-day workshop and taught two graduate-level courses for research students.
- Contributed to an IEEE Panel on rethinking power engineering education and to the IEEE Technical Report on Innovative Teaching Methods for Modern Power and Energy Systems (TR 120), advancing modern curriculum development in power and energy systems.

Service, Leadership, and Professional Recognition

- Elected as Deputy Editor-in-Chief of IEEE Transactions on Industry Applications, an elected leadership position recognizing sustained research excellence, professional service, and scholarly integrity.
- Elected as an IEEE Power and Energy Society Distinguished Lecturer through 2027, selected as among the 100 experts from approximately 40,000 members, reflecting international technical leadership.
- Delivered more than 9 keynote, tutorial, IEEE Distinguished Lecturer, and invited talks across 10 countries, in addition to over 100 invited talks and panel participations at major international conferences.
- Contributed to multiple IEEE PES General Meeting panels (2023–2024) on grid-forming inverters, AI/ML in protection and control, microgrid research convergence, and future power engineering education, providing national and international technical leadership.
    - Contributed to an IEEE Panel on Convergence of grid-forming and microgrid research and education, Ben Kroposki, Claudio Canizares, Katelynn Vance, Sukumar Kamalasadan, Saman Babaei, Nilanjan Ray Chaudhuri, 41 slides, IEEE PES General Meeting, 2024. Link
    - Contributed to an IEEE Panel on Current Limiting and Fault Ridethrough Control of Grid-Connected Grid-Forming Inverters II Ignacio Vieto, Dominic Gross, Sukumar Kamalasadan, Gab-Su Seo, Po-Hsu Huang, 18 slides Link
    - Contributed to an IEEE Panel on Do future power and energy systems require a rethink of power engineering education? G. Verbic, N. Hatziargyriou, P. Kotsampopoulos, A. Chronis, S. Kamalasadan, T. Saha, Dr. R. Yan, Y. Li, N. Mohan, S. Guggilam, A. Monti, 105 slides, IEEE PES General Meeting 2023. Link
    - Contributed to an IEEE Panel on Developing AI/ML applications for power system protection & control-Opportunities and Challenges, A. Rajapakse, S. Brahma, M. Reno, S. Kamalasadan, 76 slides, IEEE PES General Meeting 2023. Link
- Nine invited talks, Distinguished Lecturer engagements, and keynote presentations. Go to the Section
- Six conference organizing activities. Go to the Section

Contents

SUKUMAR KAMALASADAN, Ph.D., IEEE Fellow
W. S. Lee Distinguished Scholar Professor in Electrical Engineering — Research Coordinator
Department of Electrical and Computer Engineering, The University of North Carolina at Charlotte
9201 University City Blvd., Charlotte, NC 28223, USA
Contact: Email Phone Google Scholar
Web Presence: Department Personal Lab Search

Professional Profile Summary

Research

- Led high-impact research projects resulting in student research outcomes, workforce development, advanced research tools, and patented technologies deployed at multiple electric utilities and adopted by industry.
- Published over 300 peer-reviewed research articles, including more than 100 journal papers and 200 conference papers, along with 4 book chapters, 2 books, and 6 patents.
- Served as Principal Investigator (PI) or Co-PI on research grants totaling more than $15 million, with individual contributions exceeding $8 million, funded by the National Science Foundation (NSF), U.S. Department of Energy (DOE), Duke Energy, Siemens Energy, Southern California Edison, National National Laboratory of Rockies Formerly NREL, and multiple industry partners.
- Directly supervised 67 graduate theses, dissertations, and projects (36 Ph.D. and 31 M.S. students), and currently lead a research group of 10 members (8 Ph.D. students and 2 collaborating faculty).
- Provided additional supervision through exchange scholar mentoring, committee service, and external evaluations for 45 students.
- Supervised 19 undergraduate research teams at the research level.
- Delivered more than 30 keynote, tutorial, and invited talks across 10 countries, in addition to over 100 invited talks and panel participations at international conferences.
- Recipient of major research and professional honors, including:
  - IEEE Fellow (2026)
  - Stanford/Elsevier Top 2% Scientists List (both Career and Single-Year Impact) in 2022, 2023, 2024, 2025.
  - North Carolina Innovation Award (2024)
  - UNC Charlotte Distinguished Scholar Professor Award (2023)
  - UNC Charlotte College of Engineering “Struck the Gold” Award for Extramural Funding (2022)
  - UNC Charlotte Faculty Research Excellence Award (2021)
  - Duke Energy Distinguished Professorship (2019)
  - NSF CAREER Award (2008)

Teaching and Mentoring

- Taught more than 64 three-credit-hour courses in smart grids and inverter-based resource (IBR) integrated power systems, consistently receiving excellent student feedback.
- Selected as a faculty instructor for the Global Initiative of Academic Networks (GIAN), Government of India (2024).
- Mentored over 64 undergraduate students across 19 senior design teams, all industry-sponsored, with multiple teams receiving national-level awards at IEEE conferences.
- Delivered invited workshops, including the U.S.–India State and Urban Initiative at the Center for Strategic and International Studies (CSIS), Washington, D.C. (2017).
- Participated in and led faculty workshops on electric energy systems curriculum reform with emphasis on sustainability, Washington, D.C. (2015).
- Participated in the Faculty Mentoring Program, Office of Faculty Affairs, UNC Charlotte.
- Introduced and restructured multiple courses, including Smart Grid, Power System Stability, Power Generation Operation and Control, Electromagnetic Devices, Control Systems, and Electric Power Systems, incorporating challenges and solutions for IBR-integrated power grids.
- Co-PI on a National Science Foundation IUSE award focused on curriculum innovation (2021).
- Delivered specialized grid modernization courses for utility and industry professionals since 2008.
- Mentored 67 graduate students, all successfully placed in academic and industry careers.

Service and Recognition

- CPRI Visiting Chair Professor, Indian Institute of Science (IISc), Bangalore, India (2024–2025).
- Deputy Editor-in-Chief, *IEEE Transactions on Industry Applications* (2024–Present).
- Recipient of multiple IEEE Industry Applications Society citations of appreciation for outstanding leadership and service, including Chair and Paper Review Chair roles for the Industrial Automation and Control Committee (2017–2021).
- Duke Energy Distinguished Professorship in Power Engineering, UNC Charlotte (2019–Present).
- Recipient of four First Prize paper awards, one Second Prize paper award, and one Third Prize paper award at flagship IEEE PES and IEEE IAS conferences.
- Three-time Best Paper Finalist (Top 10) at flagship IEEE PES and IEEE IAS conferences.
- Nominee for Best Paper Award, *IEEE Transactions on Industry Applications* (Top 5).
- Two-time nominee for Outstanding Teaching Award, Department of Electrical and Computer Engineering, UNC Charlotte.
- Recipient of the Outstanding Teaching Award, College of Engineering, University of Toledo, Ohio.
- Paper Review Chair (Area Editor), *IEEE Transactions on Industry Applications* (2020–2021).

- Associate Editor, *IEEE Transactions on Industry Applications* and *IEEE Transactions on Vehicular Technology* (2015–Present).
- General Chair, 2nd Electric Power and Renewable Energy Conference (EPREC 2022).
- General Co-Chair, North American Power Symposium (NAPS 2015).
- Chair, IEEE Power and Energy Society University, Selection, and Quality Control Committee.
- Chair, IEEE PES Power and Energy Education Committee (2022–2024).
- Chair, IEEE Industry Applications Society Industrial Automation and Control Committee (2020–2021).
- Technical Council Member, IEEE Industry Applications Society (2020–2021) and IEEE Power and Energy Society (2022–2023).
- Member of multiple IEEE PES and IAS task forces, working groups, and standards committees, contributing to technical reports, guides, and standards.

Other Leadership Activities

- Led the development of the Duke Energy Smart Grid Laboratory, a $5 million facility, and directed laboratory activities from 2012 to 2019.
- Developed and currently direct the Power, Energy, and Intelligent Systems Laboratory, a $2 million facility (2010–Present).
- Provided leadership in departmental, college-level, and university-level faculty governance, contributing to institutional advancement initiatives.
- Mentored more than 100 researchers, all successfully placed in national and international academic, research, and industry positions.
- More than 10 IEEE prize paper awards (all with students)

CV Details

Education

Ph.D. in Electrical Engineering 2000–2004

The University of Toledo, Toledo, OH

Dissertation:"A New Generation of Adaptive Control: An Intelligent Supervisory Loop Approach."

M.Eng. in Electrical Power Systems 1998–1999

Asian Institute of Technology, Bangkok, Thailand

Thesis: "A New Approach to Voltage Stability Assessment and Improvement."

B.Tech. in Electrical & Electronics Engineering 1987–1991

University of Calicut, Kerala, India

Project: "High Fidelity Modeling of Musical Instruments with Frequency Decomposition."

Academic Experience

Experience Summary

- Total 28 years of research and teaching experience with contribution to Professional societies such as IEEE.

Distinguished Scholar Professor 2023–2026

Department of Electrical and Computer Engineering, UNC Charlotte, Charlotte, NC

Central Power Research Institute Visiting Chair Professor 2024–2025

Department of Electrical Engineering, Indian Institute of Science, Bengaluru, India

Research Coordinator 2021–Present

Department of Electrical and Computer Engineering, UNC Charlotte, Charlotte, NC

Duke Energy Distinguished Professor of Power Engineering 2019–2022

Department of Electrical and Computer Engineering, UNC Charlotte, Charlotte, NC

Full Professor (with Tenure) 2017-Present

Department of Electrical and Computer Engineering, UNC Charlotte, Charlotte, NC

Associate Professor (with Tenure) 2011-2017

Department of Electrical and Computer Engineering, UNC Charlotte, Charlotte, NC

Associate Professor (with Early Tenure) 2009-2010

Department of Engineering and Computer Technology, University of West Florida, Pensacola, FL

Director, Power, Energy, and Intelligent Systems Laboratory 2004–Present

At UWF and UNCC

Assistant Professor 2004–2009

Department of Engineering and Computer Technology, University of West Florida, Pensacola, FL

Teaching Assistant / Research Assistant 2000–2004

Department of Electrical Engineering and Computer Science, University of Toledo, Toledo, OH

- Conducted research in intelligent and adaptive control; developed supervisory-loop-based system-centric control frameworks integrating fuzzy systems and neural networks.

Research Fellow, Electrical Power Systems 1999–2000

Energy Program, Asian Institute of Technology, Bangkok, Thailand

- Developed algorithms for power flow, short-circuit analysis, voltage stability, contingency screening, reliability assessment, and optimization.

Research Scholar, Electrical Power Systems 1998–1999

Energy Program, Asian Institute of Technology, Bangkok, Thailand

- Developed neural-network-based online voltage stability analysis and fuzzy-logic-based voltage profile improvement methods, contributing to early data-driven control frameworks.

Industry, Consulting and Advising Experience

Experience Summary

- Total 11 years of industrial work, training and consulting experience.

Training and Advising 2022–2026

Scenergy Tech, LLC *Charlotte, NC*

- Advising and providing technology training R & D Testing for energy products.

Training and Consulting Summer 2006 / Summer 2007

Gulf Power Companies *Pensacola, FL*

- Delivered professional power system training courses.

Training and Consulting Summer 2008

Indyne *Pensacola, FL*

- Delivered advanced power system courses for industry professionals.

Associate Manager / Electrical Engineer Jun 1994–Dec 1997

Reliance Industries Limited *Mumbai, India*

- Designed and developed captive power plants and power distribution networks for large petrochemical and refinery complexes.
- Performed fault analysis, vendor selection, inspections, and system commissioning.

Electrical Engineer Jan 1993–May 1994

Excel Industries Limited *Mumbai, India*

- Designed power distribution systems, implemented energy conservation measures, control strategies, and power management solutions.

Project Engineer / Intern Jan 1992–Dec 1992

Tata Electric Companies *Mumbai, India*

- Worked as site engineer for the implementation of a 500 MW combined-cycle power plant.

Honors, Recognitions, and Awards (Last 10+ Years)

Details are included here if not mentioned in the profile webpage: https://coefs.uncc.edu/skamalas

Awards

- North Carolina Innovation Award, Two awards from UNC Charlotte, 2024.
- Ralph Lee Prize Paper Award, IEEE IAS, 2024, for the paper entitled "Oscillation Identification and Frequency Damping Controller Design for Battery Energy Storage System Using Subspace Identification," Fahim Al Hasnain, Shamim Hasan, Hasnain Arifin, **SukumarKamalasadan**, Michael Smith.
- Best Paper Award, IEEE IAS IACC, 2022, for the paper entitled "Graph-Based Power Flow Approach for Single-Phase Distribution System with Distributed Generators Considering All Load Types," K. Murari and **S. Kamalasadan** (Third Prize among ∼300 submissions).
- Struck Gold Award for Outstanding Scholarship in Acquiring Extramural Funding, College of Engineering, UNC Charlotte, 2022.

- Research Accomplishment Award for Maximum Research Award Participation, UNC Charlotte, 2021 (recognized in 14 categories). Link
- Best Paper Award, IEEE PES General Meeting, 2021, "Control of Transient Overvoltage for Inverter-Only Based Microgrids in Power Distribution Systems" (Best Paper among ∼700 submissions).
- Best Paper Award, IEEE PES General Meeting, 2021, "Control of Transient Overvoltage for Inverter-Only Based Microgrids in Power Distribution Systems" (Best Paper among ∼700 submissions).
- Best Student Poster Award, IEEE PES General Meeting, 2021. Link
- Best Paper Finalist, IEEE IAS Annual Meeting, 2021 (from IACC), "Inverter Angle Minimization-Based Control Approach for Dispatch of Distributed Energy Resources with Hybrid Energy Storage Systems" (Top 5 papers from ∼300 submissions).
- Nominated for Best Paper Award, IEEE IAS Annual Meeting, 2019 (from IACC), "Coordinated Voltage Control Strategy for Voltage Regulators and Voltage Source Converters Integrated Distribution Systems," *IEEE Transactions on Industry Applications* (Top 10 papers).
- Best Paper Finalist, IEEE ISGT North America, 2021 (Top 7), "A Graph Theory-Based Two-Level Spectral Clustering Approach for Active Power Grouping of DER-Integrated Power Distribution Systems."
- NSF EPCN Award, 2018. Link
- Nominated for Outstanding Teaching Award, College of Engineering, UNC Charlotte, 2015 and 2018.
- Second Best Prize Paper Award, IEEE North American Power Symposium (NAPS), 2018, "Prediction and Enhancement of Power System Transient Stability Using Taylor Series."
- First Prize Paper Award, IEEE Power and Energy Conference at Illinois (PECI), 2018, "A Potential Energy Balance-Based Approach for Transient Stability Improvement in Modern Power Grids."
- Best Student Poster Award, IEEE Transmission & Distribution Conference, 2016.
- First Prize Paper Award, IEEE IAS Annual Meeting, IACC, 2015, "Design and Real-Time Implementation of Optimal Power System Wide-Area System-Centric Controller Based on Temporal Difference Learning."
- NSF AIS Award, 2013. Link
- Best Conference Paper, IEEE PES General Meeting, 2014, "An Approach for Microgrid Management with Hybrid Energy Storage Systems Using Batteries and Ultracapacitors."
- Third Best Student Poster Award, IEEE PES Transmission & Distribution Conference, 2012.
- Best Student Poster Award, IEEE PES General Meeting, 2011.
- Myron Zucker Design Contest Award, IEEE Industry Applications Society, 2007.
- Outstanding Teaching Assistant Award, University of Toledo, Ohio, 2004.

Honors and Recognitions

- Invited Teaching, Global Initiative of Academic Network (GIAN), Government of India. Course Title: *Modeling and Management of Inverter-Based Resource (IBR) Integrated Electric Grid*, July 2025.
- Deputy Editor-in-Chief, *IEEE Transactions on Industry Applications*, IEEE Industry Applications Society, 2024–Present.
- Distinguished Scholar Professor, College of Engineering, University of North Carolina at Charlotte, 2023–2026.
- Duke Energy Distinguished Professorship in Power Engineering, University of North Carolina at Charlotte, April 2019–June 2022.
- IEEE IAS Citation of Appreciation for Outstanding Dedication and Effort as Chair, Industrial Automation and Control Committee, 2019–2021.
- IEEE IAS Citation of Appreciation for Outstanding Dedication and Effort as Technical Committee Paper Review Chair, Industrial Automation and Control Committee, 2017–2021.
- Advisory Board Member, National Renewable Energy Laboratory (NREL), 2020–Present.
- Invited Workshop, U.S.–India State and Urban Initiative, Center for Strategic and International Studies (CSIS), Washington, D.C., 2017.
- Nominated for Teaching Excellence, University of North Carolina at Charlotte, 2015 and 2017.
- IEEE Charlotte Section Citation of Appreciation for Service Excellence, IEEE PES Chair, 2013–2016.
- Nominated as Star Researcher, University of West Florida, 2010.
- National Science Foundation Faculty Early CAREER Award, 2007. Award 1, Award 2
- Listed in *Marquis Who's Who in the World* and *Who's Who in Science and Engineering*, 2007.
- Norwegian Government Scholarship for Graduate Studies (Top national award; single recipient), 1998.

Invited Talks, Keynotes, Panels, and Tutorials (Selected)

- Keynote Speaker, IEEE EPREC, 2026. Link
- Webinar Speaker, IEEE Industrial Application Society, 2025. Link
- IEEE PES Distinguished Lecturer Program (DLP), IEEE Delhi Section, 2025.
- IEEE PES Distinguished Lecturer Program (DLP), University of Manchester, Section, UK, July 2024. Link
- IEEE PES Distinguished Lecturer Program (DLP), University of Sydney Section, Australia, 2023.
- IEEE PES Distinguished Lecturer Program (DLP), University of Wollongong Section, Australia, 2023.
- IEEE PES Distinguished Lecturer Program (DLP), IEEE Texas Section, 2023.
- Keynote Speaker, IEEE Energy Transition Forum and Grid (ETFG), December 2023.

- General Co-Chair and Keynote Speaker, IEEE PESGRE Conference, December 2023.
- Invited Webinar, Lehigh University, Janak Raj Series: "Renewable Energy Integration to Electric Grid with Battery Energy Storage," 2022.
- Invited Webinar, IEEE Power & Energy Society: "Optimal Reconfiguration and Resilient Control Framework for Real-Time Photovoltaic Dispatch with Inverter-Based Resources," 2022.
- Invited Panelist, IEEE PES General Meeting: "Management and Control of Distributed Energy Resources with Battery Energy Storage," 2022.
- Invited Panelist, IEEE PES General Meeting: "Education and Research on Inverter-Based Resources," 2022.
- Keynote Speaker, IEEE Asia-Pacific Power and Energy Engineering Conference (APPEEC), 2021. Link
- Keynote Speaker, 2nd Electric Power and Renewable Energy Conference (EPREC), 2021. Link
- Invited Panelist, IEEE PES General Meeting: "Use Case of T&D Dynamic Co-Simulation," 2021.
- Invited Panelist, IEEE PES General Meeting: "Accurate Equipment Modeling Techniques for Scalable Distribution Optimal Power Flow," 2020.
- Invited Panelist, IEEE PES General Meeting: "Data-Driven Management and Control of Power Distribution Systems," 2020.
- Invited Panelist, IEEE Kerala Section, IEEE Day Celebrations, 2020.
- Invited Webinar, "Decision Support and Data-Driven Management of Electric Grid, December 2020" IEEE Miami Section, Industry Applications Society Chapter, and the Department of Electrical & Computer Engineering, FIU, 2020. Events ≪ IEEE Miami Section
- Keynote speaker, IEEE International Conference on Futuristic Technologies in Control Systems and Renewable Energy (ICFCR 2020), 2020. Link
- Invited Panelist, IEEE PES General Meeting: "Machine Learning for Power System Oscillation Characterization and Mitigation," 2020.
- Invited Seminar, Michigan Technological University: "Recent Advances in Real-Time Modeling and Distributed Control of Modern Power Grid," 2019.
- Invited Tutorial, IEEE PES ISGT Tutorial Series: "Mathematical Optimization in Active Power Distribution Systems," 2021 (with A. Dubey and S. Paudyal).
- Invited Webinar, JSS Academy of Engineering: "Renewable Energy Integration to the Power Grid: Challenges and Opportunities," 2020.
- Invited Panelist, IEEE PES General Meeting: "Forced Oscillations and Their Signatures in Modern Power Grids," 2018.
- Invited Speaker, US-Turkish Workshop titled "Smart Grid and Computational Approaches" supported by Tubitak (Kadir Has University, 2018).
- Invited Panelist, IEEE PES General Meeting: "Real-Time Distributed Optimization and Wide-Area Control in Power Grids," 2018.
- Invited Speaker, U.S.–India State and Urban Initiative, Center for Strategic and International Studies (CSIS), Washington, D.C., 2017.
- Invited Panelist, National Science Foundation, Engineering Directorate, 2017.

- Invited Workshop, DistribuTech Industry–University Program: Battery Energy Storage Management Systems, 2015–2016.
- Invited Talk, International Conference on Power, Control and Embedded Systems (ICPCES), Chennai, India, 2014.
- Invited Panelist, Florida Energy Systems Consortium (FESC): "Global Maximum Power Point Tracking Systems for Photovoltaics," 2010.

Demonstrated Professional & Academic Leadership

Professional Society, IEEE Level

- **Deputy Editor-in-Chief**, *IEEE Transactions on Industry Applications*, Industry Applications Society, 2024–Present.
- **Council Member, IEEE Industry Applications Society (IAS), 2020–2026.**
- **GeneralCo-Chair**, IEEE PESGRE Conference, 2023–2024.
- **SteeringCommitteeMember**, IEEE PESGRE Conference, 2022-2024.
- **TechnicalProgramCommitteeChair**, IEEE International Conference on Energy Technologies for Future Grid (ETFG), 2023, 2025.
- **AdvisoryBoardMember**, National Renewable Energy Laboratory (NREL), 2020–2024.
- **Chair**, Industrial Automation and Control Committee (IACC), IEEE IAS, 2019–2021.
- **Technical Committee Paper Review Chair**, Industrial Automation and Control Committee (IACC), IEEE IAS, 2017–2021.
- **Technical Program Committee Co-Chair**, International Conference on Power, Energy, and Innovations (ICPEI), 2021.
- **Technical Program Committee Member**, IEEE IAS Annual Meeting, 2020–2021.
- **Technical Program Committee Member**, IEEE International Power and Renewable Energy Conference (IPRECON), 2021.
- **Technical Committee Member**, International Conference on Electrical Systems, Technology and Information (ICESTI), Bali, Indonesia, 2019.
- **International Advisory Committee Member**, International Conference on Intelligent Control and Smart Energy Systems (ICCSEMS), 2020.
- **General Chair**, Electric Power and Renewable Energy Conference (EPREC), 2022.
- **Tutorial Organizer and Presenter**, IEEE PESGRE Conference, 2020.
- **Invited Panelist and Reviewer**, National Science Foundation (NSF), Engineering Directorate.
- **Reviewer and Panelist**, IEEE Power & Energy Society and IEEE Industry Applications Society (multiple conferences and journals).

University Level

Director, Power, Energy, and Intelligent Systems Laboratory (PEISL) 2004–Present
UNC Charlotte *Charlotte, NC*

- Founded and supervise the lab, supporting power and energy research.

- Total investment: $1.5M including real-time simulation, control and power hardware-in-the-loop, real-time data streaming, analytics, modeling, control, and Energy Management Systems (DMS) capabilities.

- Lab used for testing, applied and fundamental research, and model validation; over 20 industry and research organizations affiliated.

Director, Duke Energy Smart Grid Lab (DESGL) 2012–2019

UNC Charlotte *Charlotte, NC*

- Directed a grid-enabled real-time operational facility.
- Total investment: $5M with real-time simulation, HIL control, analytics, modeling, and DMS capabilities.
- Supports testing, applied and fundamental research, and model validation.

Member, Center for Advanced Power Engineering Research (CAPER)

Multiple Institutions and Industry/Utility Partners

- Contributed to policy development and strategic initiatives.

Associate, Energy Production Infrastructure Center (EPIC)

UNC Charlotte

- Led strategic planning, lab operations, faculty/staff recruitment, and technical initiatives.

Faculty and Staff Governance, UNC Charlotte

UNC Charlotte

- Faculty Executive Committee, 2019–2022.
- Faculty President, College of Engineering Faculty Association, 2016–2017.
- Faculty Council and Faculty Advisory Group, 2016, 2018, 2020, 2021–2022,2023–2024, 2024–2025.
- Departmental Tenure & Promotion Review Committee, Member/Chair, 2011–2015.
- College-level Tenure & Promotion Review Committee, Member 2017, 2018, 2020; Chair 2021, 2022, 2024.
- Faculty Search Committee, Member/Chair, 2013–Present.
- Graduate Committee Chair, ECE, 2019–Present; Member, 2016–2017.
- Research Coordinator, ECE, 2021–Present.
- Faculty Advisory Committee to the Provost, 2020–2021.
- College Research Grant Review Committee, 2024, 2025.
- Duke Energy Professorship Review Committee, 2022.
- EPIC Implementation Committee Member, 2012–2014.
- Undergraduate Student Advisor, 2013–2017; Technical Lead, Power System Program, 2015.
- Technical Thrust Group Chair for Power Systems, 2010–2012.
- ABET Review Committee Member, ECE, 2011.
- Undergraduate Honors Committee Member, 2017.
- Program Standards Review Committee Member, 2016.
- Undergraduate Concentration in Power and Energy Systems — Faculty Point of Contact, 2013–2017.

Faculty and Staff Governance, University of West Florida

University of West Florida

- Academic Technology Advisory Committee, Member, 2005–2010.
- University Planning Committee (Facilities), Voting Member, 2005–2010.
- Scholarly and Creative Activities Committee, Voting Member, 2005–2007.
- Undergraduate Honors Committee, Voting Member, 2006–2010.
- Program Standards Review Committee, Voting Member, 2007–2010.

National and International Professional Service

IEEE Power & Energy Society (PES) and Industry Applications Society (IAS)

- IEEE PES NAPS Steering Committee, 2017–2024.
- Member, IEEE Power System Dynamics and Control Committee, 2014–Present.
- Contributor, Oscillation Source Location Taskforce, Power System Stability Controls Subcommittee, Technical Report on Forced Oscillations.
- Contributor, Task Force on Dynamic System Equivalents, Technical Paper: "Application of Balanced Realizations for Model-Order Reduction of Dynamic Power System Equivalents", 2016.
- Member, IEEE AMPS Committee, Distribution System Subcommittee, 2019–Present.
- IEEE PES Transmission and Distribution Committee, Distribution Subcommittee, 2019–Present.
- Contributor to Taskforces on: Distributed Energy Storage Integration and DER Interconnection Technical Review.
- Member, IEEE PES Power System Relaying Subcommittee (PSRC), contributing to J18, C43, C45, P2030.12, P2800.2 working groups on wind farm control, wide-area monitoring, machine learning, microgrid power flow, and IBR modeling.
- IEEE PES Power & Energy Education Committee (PEEC): Secretary 2018–2019, Vice-Chair, Chair 2022–2024; involved in operating manual revision, technical initiatives, and IEEE PES technical council coordination.
- IEEE IAS Industrial Automation and Control Committee (IACC): Secretary 2016–2017, Vice-Chair 2018–2019, Chair 2020–2021; Paper Review Chair since 2018, managing 12 Associate Editors and more than 200 papers annually.
- IEEE Charlotte Section, PES Chair 2013–2016, Secretary 2014; organized programs, lectures, and student events.
- Long-Range Planning Committee Member (Education), IEEE PES, 2020–2022; involved in lifelong learning initiatives.

Editorial Roles

- Deputy Editor-in-Chief, IEEE Transactions on Industry Applications, 2024–Present.
- Editor, IEEE Transactions on Vehicular Technology, 2018–Present; section on Vehicular Electronics and Electric/Hybrid Vehicle Systems and Control.
- Special Issue Guest Editor, IEEE Transactions on Industry Applications, 2020; Editorial Board Member, 2019–2020.
- Guest Editor, ICCSEMS-2020, International Journal of Energy Technology and Policy.

Conference and Workshop Leadership

- General Co-Chair, IEEE PES North American Power Symposium (NAPS), 2015; coordinated 187 papers and 280 attendees.
- General Chair, NC Smart Grid Forum, 2012.
- Technical Program Committee Member/Session Chair/Organizer for IEEE IAS Annual Meeting, IEEE NAPS, ISGT, IEEE Southeastern Conference, 2006–2015.
- Invited Panelist, IEEE PES General Meetings, 2011, 2020.
- Organizer and Chair for tutorials, webinars, and paper selection for IEEE PES and IEEE IAS conferences since 2014.

Grant Review and Panel Service

- NSF Panelist (CAREER, CRISP, CPS, EPAS, EPCN, SSC), 2007–Present.
- NSERC Discovery Grant Panelist, Canada, 2015.

- Ad hoc grant reviewer: NSF IIS, NSERC Fellows, South Carolina State Smart Grid Consortium.

Other Activities

- Reviewer, IEEE Computer Applications Society.
- Session Chair, International Conference on Artificial Intelligence.
- Participant and judge for student paper and ethics competitions, IEEE SoutheastCon.

Press Releases and Accomplishment Highlights (Selected)

- **EnsuringPowerinaCarbon-NeutralFuture**, 2025: View Press Release
- **KamalasadanwinsNCInnovationgrantforenergyresearch**, 2024: Watch Interview
- **RenewableEnergyOptimization**, 2024: View Press Release
- **NCInnovationGrantPressRelease**, 2024: View Press Release
- **InterviewonWBTV,NCInnovationGrant**, 2024: Watch Interview
- **Renewable Energy Integration to Electric Grid with Battery Energy Storage Seminar Series**, Janakraj Seminar, Lehigh University, Spring 2022: Watch Video
- **Smart Grid Lab Development**: Smart Grid Lab Getting Smarter
- **Duke Energy Smart Grid Lab Director**: View Article
- **Battery Energy Storage System Management for Improving Grid Reliability**: Read Press Release
- **Renewable Energy Advances in EPIC, UNCC**: Read Press Release
- **Department of Energy SETO Project: ReDis-PV Website Launch**: Project Website
- **DOE SETO Project Press Releases**: Press Release 1, Press Release 2
- **Featured in UNCC Millennial Magazine**: View Magazine
- **IEEE PES Long-Range Planning Meeting Event Blog**: View Blog
- **Research Accomplishment Award Press Release**: Read Release
- **Charlotte's Dynamic Energy Cluster Report**: View Report
- **Smart Grid Lab Getting Smarter**: View Article
- **Tutorial Presentations at PESGRE2020**: View Tutorial
- **Steering Committee Member, PESGRE 2022**: Committee Website
- **UTC Foundation Grant**: Press Release

Other Professional Affiliations and Service Activities (Selected)

- **IEEE Memberships**
  - IEEE Member, Senior Member, IEEE Fellow, 2000–Current
  - IEEE Industrial Applications Society – Member, 2007–Current
  - IEEE IAS TIA Dy Editor-in-Chief, 2024–Current
  - IEEE IAS Publication Committee, 2017–Current
  - IEEE IAS Technical Council, 2017–Current
  - IEEE IAS MSDAD, 2017–2021
  - IEEE Power & Energy Society – Member, 2002–Current
  - Various IEEE PES Committees: Power Systems Analysis, Computing and Economic Committee; Intelligent System Subcommittee; Multi-agent Systems Taskforce; Intelligent Control Systems Taskforce; Power Systems Dynamic Performance Committee; Oscillation Task Force Sub-Committee (Task Chair 2017–2018); Power System Stability Subcommittee; Voltage Stability Focus Group; Power Energy Education Committee (Secretary 2018–Current)

* New Product and Development Committee – Member 2017–Current; Quality Control Sub-Committee – Chair 2017–Current
* Other IEEE Society Memberships: Industrial Electronics Society (2007–Current), Control Systems Society (2006–Current), Power Electronics Society (2007–Current), Computational Intelligence Society (2000–2012)
* Lifelong Learning Sub-Committee, Chair 2014–2016, Vice-Chair 2012–2014, Secretary 2010–2012
* IEEE IAS Annual Meeting Committee, 2017–2021
* Industrial Automation Control Committee – Member, 2009–Current; Secretary 2016–2017, Vice Chair 2018–2019, Chair 2020–2021, Past Chair 2022–2023

- **Other Memberships**
  * International Society of Computer Applications (ISCA) – Member, 2003–2007
  * International Association of Engineers (IAENG) – Member, 2005–Current
  * POWERGLOBE – Member, 2005–Current
  * Florida Energy Systems Consortium (FESC) – Member, 2009–Current
- **Review / Editorial Board / Advisory**
  * West Florida Technical High School Advisory Board – Member, 2005–2010
  * SC Smart Grid Energy Center, Proposal Adhoc Reviewer, 2013
  * Associate Editor, IEEE Transactions on Industry Applications, 2013–2014, 2016–Present
  * Associate Editor, IEEE Transactions on Sustainable Energy, 2013; Guest Editor, IEEE Transactions on Sustainable Energy, 2012
- **Manuscript Refereeing (Selected Journals)**
  * IEEE Transactions on Power Systems, IEEE Transactions on Fuzzy Systems, IEEE Transactions on Neural Networks, IEEE Transactions on Education, IEEE Transactions on Industry Applications, IEEE Transactions on Industrial Electronics, International Journal of System Science, Journal of Fuzzy Sets and Systems, International Journal of Power and Energy Systems, International Journal of Electric Power and Energy Systems, Journal of Neural Computing and Applications, Control Systems Practice, International Journal of Adaptive Control and Signal Processing
- **Manuscript Refereeing (Selected Conferences)**
  * IEEE American Control Conference, 2007–2008; IEEE Multi-conference on Systems and Control, 2007; IFAC World Congress, 2008; IEEE Conference on Decision and Control, 2007–2008; IJME Intertech Joint International Conference, 2007; Student Poster Session, IEEE PES GM, Tampa, 2007; North American Power Symposium, 2007; IEEE Southeastern Conference, Memphis, 2006
- **Other Professional Activities and Accomplishments (Selected)**
  * General Co-Chair, North American Power Symposium (NAPS) 2015 – 280 attendees, 187 papers accepted
  * Symposium Chair, NC Smart Grid Forum 2012 – 150 attendees
  * Session Chair, IEEE NAPS 2009–2015
  * Session Chair / Organizer, IEEE IAS Annual Meeting 2010–2015
  * Program Committee Member, FESC Energy Summit, Orlando, 2010
  * Panelist, IEEE PES General Meeting, 2011
  * Session Chair, IEEE Southeastern Conference, Memphis, 2006
  * Panelist, Research Student and Faculty Internal Grant, UWF
  * Evaluator and Judge, IEEE Southeast Con – Student Paper and Ethics Competition
  * Session Chair, International Conference on Artificial Intelligence
  * Reviewer, Computer Applications Society

* Grant Refereeing (Adhoc): NSF Panel (IIS, 2007), NSERC Fellow Review, South Carolina State Smart Grid Consortium Review

- **Professional Development Activities**
  * OPAL-RT Training, Hypersim, UNCC, 2014
  * OPEN DSS training, EPRI, 2013
  * RTDS Training, UNCC, 2011
  * Opal-RT Installation and Training, eMegasim, UNCC, 2010
  * Matlab/Simulink training, AIT, 1999
  * International Conference on Computer Applications in Industry and Engineering, 2004
  * LabVIEW training, UWF, 2005
  * Faculty workshops and new faculty orientations, Center for Teaching and Learning, 2005
  * Faculty workshops on Tenure and Promotion, Center for Teaching and Learning, UWF, 2005
  * International Conference on Artificial Intelligence, Pune, India, 2005
  * International Conference on Computer Applications in Industry and Engineering, 2006
  * IEEE Southeastern Conference, Memphis, USA, 2006
  * IEEE PES GM, Tampa 2007; Pittsburgh 2008; Calgary 2009; NAPS 2009
  * IEEE IJCNN, Orlando 2007; Atlanta 2009
  * IEEE PES GM, IEEE IECON, Orlando 2008

Research and Scholarly Activities

- **Current Research:** Control of inverter-based resources (IBRs) for grid-connected and islanded operation; management of multiple IBRs in distribution systems considering unbalances; islanded distribution grid resilience using distributed battery energy sources; grid-level state estimation considering vulnerabilities and attacks; towards 100 % IBR operated transmission and distribution grid: challenges and opportunities.
- **Research Leadership:** Team member on over $15M in grants and contracts, with individual contributions exceeding $8M. Funded by NSF, DOE, state agencies, and industry/utility partners. Research focuses on power grid modeling, advanced sensors, wide-area monitoring and control, and renewable energy integration.
- **Research Contributions:** Original work in (a) Power System Modeling and Control, (b) Renewable Energy Integration, (c) Control and experimental research on Energy Storage, (d) Wide-area monitoring and control. Over 300 peer-reviewed research articles, 4 issued patents, 4 patent publications, 1 provisional patents, and multiple technical reports and innovations recognized nationally.
- **Graduate Student Mentorship:** Advised/mentored 67 graduate students, 65 senior design, 11 undergraduate research students, 3 postdoctoral trainees. Strong placement record at national labs, utilities, and industry (e.g., SEL, Duke Energy, FPL, AEP, AREVA). Students have won IEEE awards, conference awards, and senior design exposition prizes, One book in preperation.
- **Publications (Selected):** 4 books, 5 book chapters, more than 100 refereed journal papers, more than 150 peer-reviewed conference papers.
- **Patents and Technical Reports:** 2 full patents, 5 provisional patents, 40 technical reports submitted to federal agencies and Duke Energy.
- **Course Development:** Developed new courses, ECGR 6147/8147 Power System Stability, ECGR 6190/8190 Smart Grid; modified ECGR 4190/5142 Power Generation, Operation, and Control. Average student evaluation 4.4/5. Previously developed courses in Power Systems, Control Systems, Intelligent Systems, and Computational Methods.
- **Student Feedback and Recognition:** Twice nominated for Outstanding Graduate Teaching Award; senior design teams won IEEE and university competitions; strong mentorship record for undergraduates and graduate students.

- **Industry Workshops:** Conducted workshops for Gulf Power (Southern Company) covering voltage regulation, motor control, and lightning theory.
- **Student Mentorship:** Advised 67 graduate, 11 undergraduate research students, 65 senior design students, exchange scholars, and postdoctoral trainees. Many students placed in industry and utilities including Duke Energy.

Funded Research Grants and Contracts

Funding Summary

Funding Category	Total ($)	Individual Share ($)
Competitive Funding (32 PI, 9 co-PI)	13,293,544	7,158,047
Non-Competitive Funding (Equipment & Donations)	2,158,000	1,364,900
Total Funding (All)	15,451,544	8,522,947

Competitive and Non-Competitive Research Funding (Reverse Chronological Order)

#	Year	Project Title	Team and Role	Sponsor	Total ($)	Share ($)
1	2025	Main Tie Tie Main Protection Coordination	**PI: S. Kamalasadan**	ECNS Global	26,916	26,916
2	2025	Digital Twin Power System Model for Hybrid Technology Configurations	**PI: S. Kamalasadan**, co-PI: M. Smith	Siemens Energy	120,000	60,000
3	2024	Advanced Methods for Integrating Renewables in Grid Planning (ADMIRE–GridPlan)	**PI: S. Kamalasadan**	U.S. DOE (Subaward)	2,500,000	500,000
4	2024	Grid Efficiency and Power Quality Improvement	**PI: S. Kamalasadan**	NC Innovation Grant	355,000	355,000
5	2024	Digital Twin Power System Model for Hybrid Technology Configurations	**PI: S. Kamalasadan**, co-PI: M. Smith	Siemens Energy	120,000	60,000
6	2023	Digital Twin Power System Model for Hybrid Technology Configurations	**PI: S. Kamalasadan**, co-PI: M. Smith	Siemens Energy	100,000	50,000
7	2022	I-Corps: Energy Conservation Network Software	**PI: S. Kamalasadan**	NSF I-Corps	50,000	50,000
8	2022	Digital Twin Power System Model for Hybrid Technology Configurations	**PI: S. Kamalasadan**, co-PI: M. Smith	Siemens Energy	100,000	50,000
9	2021	ERC Planning Grant	co-PI: **S. Kamalasadan**	NSF	99,000	19,800

#	Year	Project Title	Team and Role	Sponsor	Total ($)	Share ($)
10	2021	Stability and Control of Renewable Energy Integrated Power Grid	**PI: S. Kamalasadan**	Siemens	30,000	30,000
11	2020	Storage Integration Project – Phase VI	**PI: S. Kamalasadan**	Duke Energy	152,740	152,740
12	2020	Stability and Control of Renewable Energy Integrated Power Grid	**PI: S. Kamalasadan**	Siemens	30,000	30,000
13	2019	Optimal Reconfiguration and Resilient Control Framework for Real-Time PV Dispatch	**PI: S. Kamalasadan**	U.S. DOE	4,600,000	3,220,000
14	2019	Improving Student Learning in Power Engineering	co-PI: **S. Kamalasadan**	NSF IUSE	179,964	59,388
15	2019	FAST-DERMS	co-PI: **S. Kamalasadan**	NREL	192,000	96,000
16	2019	Stability and Control of Renewable Energy Integrated Power Grid	**PI: S. Kamalasadan**	Siemens	30,000	30,000
17	2018	Data-Driven Operation and Control of Active Power Distribution Systems	**PI: S. Kamalasadan**	NSF	360,000	324,000
18	2018	Storage Integration Project – Phase V	**PI: S. Kamalasadan**	Duke Energy	122,740	122,740
19	2017	Modeling and Control of Flywheel Integrated Power Grid	**PI: S. Kamalasadan**	GTS	144,819	57,928
20	2017	Cyber Security Studies of Power Distribution Systems	**PI: S. Kamalasadan**	UTC	22,400	22,400
21	2017	Storage Integration Project – Phase IV	**PI: S. Kamalasadan**	Duke Energy	122,883	122,883
22	2016	Storage Integration Project – Phase III	**PI: S. Kamalasadan**	Duke Energy	125,018	125,018
23	2016	DC Bus Integration of Battery Energy Storage with PV Inverter	co-PI: **S. Kamalasadan**	Duke Energy	57,380	5,738
24	2016	Modeling and Control of Power Grid with PV and Energy Storage	**PI: S. Kamalasadan**	Iris Energy	17,000	17,000
25	2016	Modeling and Control of Power Distribution with Energy Storage	**PI: S. Kamalasadan**	A.F. Mensah	163,017	146,715
26	2016	Simulation and Testing Capabilities Enhancement at Mt. Holly Lab	co-PI: **S. Kamalasadan**	Duke Energy	21,801	2,180

#	Year	Project Title	Team and Role	Sponsor	Total ($)	Share ($)
27	2015	North American Power Symposium Student Support Program	co-PI: **S. Kamalasadan**	NAPS	15,000	7,500
28	2015	Hybrid Real-Time Simulator for Renewable Energy Grid	**PI: S. Kamalasadan**	SCE	150,000	105,000
29	2015	Storage Integration Project	**PI: S. Kamalasadan**	Duke Energy	82,244	74,020
30	2014	Storage Integration Project	**PI: S. Kamalasadan**	Duke Energy	89,354	62,548
31	2013	Stochastic Dynamic Intelligent Grid Optimization Architecture	**PI: S. Kamalasadan**	NSF	340,000	340,000
32	2012	PV Generation Integration Study	co-PI: **S. Kamalasadan**	Duke Energy	55,631	22,252
33	2012	MRI: Real-Time Digital Simulator for Next-Generation Grid	co-PI: **S. Kamalasadan**	NSF	368,887	121,733
34	2008	CAREER: Scalable Intelligent Supervisory Control Algorithms	**PI: S. Kamalasadan**	NSF	296,750	296,750
35	2010	Implementation of Renewable Energy-Based Microgrid (Phase I & II)	**PI: S. Kamalasadan**	Internal Grant	30,000	30,000
36	2009	Modeling and Simulation of Renewable Energy Microgrid	**PI: S. Kamalasadan**	SCAC	2,000	2,000
37	2008	High-Performance Intelligent Control of Induction Machines	**PI: S. Kamalasadan**	SCAC	2,000	2,000
38	2008	CAREER: Intelligent Supervisory Loop Algorithms	**PI: S. Kamalasadan**	NSF	103,250	103,250
39	2006	Intelligent Adaptive Controllers via Supervisory Loops	**PI: S. Kamalasadan**	UWF	7,500	7,500
40	2005	Intelligent Adaptive Controllers Using Supervisory Loops	**PI: S. Kamalasadan**	SCAC	2,000	2,000
41	2005	End-to-End Smart Grid Demonstration	co-PI: **S. Kamalasadan**	UWF / Gulf Power	2,006,280	200,628
42	2015	PI Server Donation for Smart Grid Lab	**PI: S. Kamalasadan**	Industry Donation	611,000	611,000
43	2015	OPAL-RT Hypersim Platform Donation	**PI: S. Kamalasadan**	OPAL-RT	692,000	484,400
44	2015	RTDS Real-Time Simulation Platform	**PI: S. Kamalasadan**	RTDS	350,000	87,500
45	2015	SEL Synchrophasor Testbed	co-PI: **S. Kamalasadan**	SEL	120,000	24,000
46	2015	Software Infrastructure for Smart Grid Lab	**PI: S. Kamalasadan**	Industry Donation	300,000	90,000

#	Year	Project Title	Team and Role	Sponsor	Total ($)	Share ($)
47	2015	Server Platform for Smart Grid Lab	**PI: S. Kamalasadan**	Industry Donation	85,000	68,000
		Grand Total			**$15,451,544**	**$8,522,947**

Publications

(For more details, please visit Google Scholar: Citations 4932, h-index 38, i10-index 134)

Books

1. S. Kamalasadan,Sumit Paudyal, "Electric Distribution Grid with Inverter-based Resources. Modelling, Management, Optimization, and Control Approaches", Wiley-IEEE Press," IEEE Wiley Publishers, 2026. (Under Preparation)
2. Shailendra Kumar, Jitendra Kumar, Narayana Prasad Padhy, Sukumar Kamalasadan, Premalata Jena, "Soft Computing Applications in Modern Power and Energy Systems: Select Proceedings of EPREC 2024," Edited Book, Lecture Notes in Electrical Engineering, Springer Nature, 2026, ISBN: 978-981-96-0057-1.
3. Gupta, Om Hari ; Padhy, Narayana Prasad ; S. Kamalasadan, "Soft Computing Applications in Modern Power and Energy Systems: Select Proceedings of EPREC 2023," Edited Book, Lecture Notes in Electrical Engineering, Springer Nature, 2024, ISBN: 97-898-199800-62.
4. Murari K., Padhy N.P., S. Kamalasadan, "Soft Computing Applications in Modern Power and Energy Systems: Select Proceedings of EPREC 2022," Edited Book, Lecture Notes in Electrical Engineering, Springer Nature, 2023, ISBN: 978-981-198352-8.
5. S. Kamalasadan, "Novel Intelligent Adaptive Designs for the Control of Smart Systems," Invited Book, VDM Publishing House, June 2010, ISBN 978-3639255102.

Book Chapters

1. Krishna Murari, Sameep Sahu, Om Hari Gupta, N.P. Padhy, S. Kamalasadan, "Load Flow Solution Algorithm for AC-DC Radial Distribution Systems in the Presence of Distributed Generation," In: *SoftComputingApplicationsforAdvancementsinPowerSystems*, River Publishers, 2024.
2. S. Kamalasadan, James T. Haney, Chad M. Tanton, "Modeling and Control of a Hybrid Smart Micro-Grid Using Photo-Voltaic Arrays and Proton Exchange Membrane Fuel Cells," In: *Modeling and Control of Sustainable Power Systems Green Energy and Technology*, Springer, 2012, pp. 209-247.
3. S. Kamalasadan, Adel A. Ghandakly, "A Novel Intelligent Control Approach for Precise Tracking of Autonomous Robots," In: *Design and Control of Intelligent Robotic Systems*, Springer, Studies in Computational Intelligence, Vol. 177, pp. 227-254, 2009, ISBN: 978-3-540-89932-7.
4. S. Kamalasadan, Khalid S. Al-Olimat, "Fuzzy Logic Systems and Control," Invited Book Chapter, In: Encyclopedia of Computer Science and Engineering, John Wiley & Sons, Vol 2, pp. 1344-1355, 2009, ISBN: 978-0-471-38393-2.

5. S. Kamalasadan, Khalid S. Al-Olimat, Adel A. Ghandakly, "Design and Tuning of Intelligent Adaptive Power System Stabilizers Based on Supervisory Loop Concept," Invited Book Chapter, In: *Intelligent Techniques for Power System Generation*, IEEE PES Intelligent Control Systems Working Group, IEEE CIS Power System Applications Task Force, 2004.

Journal Publications

1. S. K. Pandey, S. Kumar, K. Murari, and S. Kamalasadan, "Advanced control and integration of fuel cell with doubly fed induction generators for sustainable power generation," *IEEE Transactions on Industry Applications*, 2026.
2. M. M.-U.-T. Chowdhury, M. S. Hasan, and S. Kamalasadan, "A second-order cone programming (socp) based co-optimization approach for integrated transmission-distribution optimal power flow," *IEEE Transactions on Industry Applications*, 2025.
3. M. M.-U.-T. Chowdhury, K. Murari, M. S. Hasan, and S. Kamalasadan, "Optimal power flow (opf) analysis for ac–dc active distribution networks utilizing second-order cone programming (socp) approach," *IEEE Transactions on Industrial Informatics*, 2025.
4. M. S. Hasan, M. M.-U.-T. Chowdhury, and S. Kamalasadan, "Optimal power flow in electric transmission system: Comparative study and analysis of modeling methods," *IEEE Transactions on Industry Applications*, 2025.
5. M. S. Hasan, M. M.-U.-T. Chowdhury, S. Paul, A. Sharma, K. Murari, N. P. Padhy, and S. Kamalasadan, "Fully distributed and fast optimization approaches for ac-dc radial distribution networks with dynamic load and der response," *IEEE Transactions on Industry Applications*, 2025.
6. M. S. Hasan and S. Kamalasadan, "Distributed optimal power flow for bulk transmission grid based on modified equivalent network approximation method," *IEEE Transactions on Industry Applications*, 2025.
7. A. Ingalalli, A. I. Aygun, and S. Kamalasadan, "A unified control design of three phase inverters suitable for both grid-forming and following modes of operation," *IET Renewable Power Generation*, vol. 19, no. 1, e70043, 2025.
8. S. Kumar, S. Kumar, S. Kurm, K. Murari, M. S. Hasan, and S. Kamalasadan, "A novel sensorless vector controlled pmasyrm drive for light electric vehicle applications," *IEEE Transactions on Industry Applications*, 2025.
9. K. Murari, M. S. Hasan, S. Paul, N. P. Padhy, and S. Kamalasadan, "Advanced distribution use of network pricing method for equitable cost allocation in distributed energy resources integrated power systems," *IEEE Transactions on Industry Applications*, 2025.
10. A. Suresh, M. S. Hasan, S. Kamalasadan, and S. Paudyal, "A distributed energy resources integrated transmission and distribution continuation power flow model with sequence component approach," *IEEE Transactions on Industry Applications*, 2025.
11. A. Suresh, K. Murari, S. Kamalasadan, and S. Paudyal, "Development of a novel sequence component-based method for the faults analysis in unbalanced power distribution networks," *IEEE Transactions on Industry Applications*, 2025.
12. M. Vilathgamuwa, K. J. Tseng, Y. Li, A. RATHORE, K. Muttaqi, S. Williamson, S. Kamalasadan, N. Mendis, and R. Wang, "Guest editorial: Advanced and innovative control technologies for grid-resilience-enhancing energy storage systems," *IEEE Transactions on Industry Applications*, 2025.

13. Y. Wang, C. H. Konstantinou, Q. Zhou, Y. Ye, X. Wang, N. D. Hatziargyriou, A. K. Srivastava, and S. Kamalasadan, "Guest editorial: Cybersecurity and resilience of networked microgrids," *IEEE Transactions on Industry Applications*, 2025.

14. F. Al Hasnain, M. S. Hasan, M. H. Arifin, S. Kamalasadan, and M. Smith, "Oscillation identification and frequency damping controller design for battery energy storage system using subspace identification," *IEEE Transactions on Industry Applications*, vol. 60, no. 3, pp. 4796–4809, 2024.

15. M. Al Mamun, S. Paudyal, and S. Kamalasadan, "Efficient method for solving dynamic model of pv-integrated unbalanced distribution systems," *IEEE Transactions on Industry Applications*, 2024.

16. A. I. Aygun, M. S. Hasan, A. Joshi, and S. Kamalasadan, "A two-stage optimal electric vehicles charging methodology based on aggregators considering grid reliability and operational efficiency," *IEEE Transactions on Industry Applications*, 2024.

17. A. I. Aygun, M. S. Hasan, A. Joshi, and S. Kamalasadan, "An optimal hybrid management of electric vehicle fleet charging and load scheduling in active electric distribution system," *IEEE Transactions on Industry Applications*, vol. 60, no. 4, pp. 5304–5316, 2024.

18. M. M.-U.-T. Chowdhury, M. S. Hasan, and S. Kamalasadan, "A novel voltage optimization co-simulation framework for electrical distribution system with high penetration of renewables," *IEEE Transactions on Industry Applications*, 2024.

19. M. S. Hasan, M. M.-U.-T. Chowdhury, and S. Kamalasadan, "Sequential quadratic programming (sqp) based optimal power flow methodologies for electric distribution system with high penetration of ders," *IEEE Transactions on Industry Applications*, vol. 60, no. 3, pp. 4810–4820, 2024.

20. A. Ingalalli and S. Kamalasadan, "Grid decentralization: A unified controller for distributed energy resource-dominated grid operation," *IEEE Electrification Magazine*, vol. 12, no. 2, pp. 71–79, 2024.

21. A. R. Nair, S. Patel, S. Kamalasadan, M. Smith, and S. Siddiqui, "Parametrically optimized synchronous condenser coordinated control framework to enhance bulk grid stability with renewables," *IEEE Transactions on Industry Applications*, vol. 60, no. 4, pp. 5737–5750, 2024.

22. O. Ogundairo, M. S. Hasan, S. Kamalasadan, et al., "Stochastic optimization of integrated transmission and distribution network considering distributed generation with uncertainties," *IEEE Transactions on Industry Applications*, vol. 60, no. 4, pp. 5577–5588, 2024.

23. M. Al Mamun, S. Paudyal, and S. Kamalasadan, "Computationally efficient dynamic simulation of integrated transmission and distribution systems," *IEEE Transactions on Power Systems*, vol. 39, no. 3, pp. 4865–4880, 2023.

24. M. M.-U.-T. Chowdhury, B. D. Biswas, and S. Kamalasadan, "Second-order cone programming (socp) model for three phase optimal power flow (opf) in active distribution networks," *IEEE Transactions on Smart Grid*, vol. 14, no. 5, pp. 3732–3743, 2023.

25. M. M.-U.-T. Chowdhury, S. Kamalasadan, and S. Paudyal, "A second-order cone programming (socp) based optimal power flow (opf) model with cyclic constraints for power transmission systems," *IEEE Transactions on Power Systems*, vol. 39, no. 1, pp. 1032–1043, 2023.

26. M. S. Hasan, M. M.-U.-T. Chowdhury, B. D. Biswas, and S. Kamalasadan, "Semi-definite programming based scalable and accurate optimal power flow models for radial distribution networks," *IEEE Transactions on Industry Applications*, vol. 60, no. 1, pp. 1463–1475, 2023.

27. A. Inaolaji, A. Savasci, S. Paudyal, and S. Kamalasadan, "Distributed optimal power flow in unbalanced distribution grids with non-ideal communication," *IEEE Transactions on Industry Applications*, vol. 59, no. 5, pp. 5385–5397, 2023.

28. A. Ingalalli and S. Kamalasadan, "Data-driven decentralized online system identification-based integral model-predictive voltage and frequency control in microgrids," *IEEE Transactions on Industrial Informatics*, vol. 20, no. 2, pp. 1963–1974, 2023.

29. A. Ingalalli, S. Kamalasadan, Z. Dong, G. R. Bharati, and S. Chakraborty, "Event-driven q-routing-based dynamic optimal reconfiguration of the connected microgrids in the power distribution system," *IEEE Transactions on Industry Applications*, vol. 60, no. 1, pp. 1849–1859, 2023.

30. K. Murari, N. P. Padhy, and S. Kamalasadan, "A backward-forward sweep based power flow algorithm for generalized ac-dc distribution network with distributed generations," *IEEE Transactions on Industry Applications*, vol. 59, no. 4, pp. 5032–5047, 2023.

31. M. Smith and S. Kamalasadan, "Data-driven hybrid parametrically optimized adaptive control framework for enhancing stability boundaries of nonlinear systems," *IEEE Transactions on Industry Applications*, vol. 59, no. 6, pp. 7507–7518, 2023.

32. R. Ariwoola and S. Kamalasadan, "An integrated hybrid thermal dynamics model and energy aware optimization framework for grid-interactive residential building management," *IEEE Transactions on Industry Applications*, vol. 59, no. 2, pp. 2519–2531, 2022.

33. B. D. Biswas, M. S. Hasan, and S. Kamalasadan, "Decentralized distributed convex optimal power flow model for power distribution system based on alternating direction method of multipliers," *IEEE Transactions on Industry Applications*, vol. 59, no. 1, pp. 627–640, 2022.

34. A. Ingalalli and S. Kamalasadan, "A novel sequence-based unified control architecture for multiple inverter modes of operation in unbalanced distribution system," *IEEE Transactions on Power Delivery*, vol. 38, no. 2, pp. 1182–1196, 2022.

35. A. Ingalalli and S. Kamalasadan, "Decentralized state estimation-based optimal integral model predictive control of voltage and frequency in the distribution system microgrids," *IEEE Transactions on Smart Grid*, vol. 14, no. 3, pp. 1790–1803, 2022.

36. R. R. Jha, A. Inaolaji, B. D. Biswas, A. Suresh, A. Dubey, S. Paudyal, and S. Kamalasadan, "Distribution grid optimal power flow (d-opf): Modeling, analysis, and benchmarking," *IEEE Transactions on Power Systems*, vol. 38, no. 4, pp. 3654–3668, 2022.

37. A. Joshi, A. I. Aygun, S. Kamalasadan, and K. Biju, "Inverter-angle-induced optimized frequency regulation approach for ac–dc microgrids using consensus-based identification," *IEEE Transactions on Industry Applications*, vol. 58, no. 5, pp. 6780–6792, 2022.

38. K. Murari and S. Kamalasadan, "Graph-based power flow algorithm for three-phase distribution network considering regulators and distributed generations," *IEEE Transactions on Industry Applications*, vol. 58, no. 4, pp. 5409–5422, 2022.

39. A. Nair, S. Kamalasadan, J. Geis-Schroer, S. Patel, and M. Smith, "An investigation of grid stability and a new design of adaptive phase-locked loop for wind-integrated weak power grid," *IEEE Transactions on Industry Applications*, vol. 58, no. 5, pp. 5871–5884, 2022.

40. O. Ogundairo, S. Kamalasadan, A. R. Nair, and M. Smith, "Oscillation damping of integrated transmission and distribution power grid with renewables based on novel measurement-based optimal controller," *IEEE Transactions on Industry Applications*, vol. 58, no. 3, pp. 4181–4191, 2022.

41. S. Patel, K. Murari, and S. Kamalasadan, "Distributed control of distributed energy resources in active power distribution system for local power balance with optimal spectral clustering," *IEEE Transactions on Industry Applications*, vol. 58, no. 4, pp. 5395–5408, 2022.

42. A. Suresh, R. Bisht, and S. Kamalasadan, "A coordinated control architecture with inverter-based resources and legacy controllers of power distribution system for voltage profile balance," *IEEE Transactions on Industry Applications*, vol. 58, no. 5, pp. 6701–6712, 2022.

43. A. Suresh, K. Murari, and S. Kamalasadan, "Injected current sensitivity based load flow algorithm for multi-phase distribution system in the presence of distributed energy resources," *IEEE Transactions on Power Delivery*, vol. 37, no. 6, pp. 5081–5093, 2022.

44. F. Al Hasnain, S. J. Hossain, and S. Kamalasadan, "A novel hybrid deterministic-stochastic recursive subspace identification for electromechanical mode estimation, classification, and control," *IEEE transactions on industry applications*, vol. 57, no. 5, pp. 5476–5487, 2021.

45. F. Al Hasnain, A. Sahami, and S. Kamalasadan, "An online wide-area direct coordinated control architecture for power grid transient stability enhancement based on subspace identification," *IEEE Transactions on Industry Applications*, vol. 57, no. 3, pp. 2896–2907, 2021.

46. M. M.-U.-T. Chowdhury and S. Kamalasadan, "A new second-order cone programming model for voltage control of power distribution system with inverter-based distributed generation," *IEEE Transactions on Industry Applications*, vol. 57, no. 6, pp. 6559–6567, 2021.

47. A. Joshi and S. Kamalasadan, "Optimal robust control based on partial derivative plant approximation for frequency support using multiple dc microgrids," *IEEE Transactions on Industry Applications*, vol. 58, no. 1, pp. 807–819, 2021.

48. A. Joshi, A. Suresh, and S. Kamalasadan, "Grid frequency regulation based on point of common coupling angle deviation control of distributed energy resources with fully active hybrid energy storage system," *IEEE Transactions on Industry Applications*, vol. 57, no. 5, pp. 4473–4485, 2021.

49. A. R. Nair, R. Bhattarai, M. Smith, and S. Kamalasadan, "A hybrid adaptive control architecture for grid-connected inverter with optimal policy generation," *IEEE Transactions on Industry Applications*, vol. 58, no. 1, pp. 855–867, 2021.

50. A. Thakallapelli, S. Ghosh, and S. Kamalasadan, "Sensorless real-time reduced order model-based adaptive maximum power tracking pitch controller for grid connected wind turbines," *Electric Power Systems Research*, vol. 194, p. 107 115, 2021.

51. S. K. Abilash Thakallapelli, "Measurement-based wide-area damping of inter-area oscillations based on mimo identification," *IET Generation Transmission & Distribution*, 2020.

52. R. Bisht, R. Bhattarai, S. Subramaniam, and S. Kamalasadan, "A novel synchronously rotating reference frame based adaptive control architecture for enhanced grid support functions of single-phase inverters," *IEEE Transactions on Industry Applications*, vol. 56, no. 4, pp. 4288–4298, 2020.

53. S. Ghosh, Y. J. Isbeih, R. Bhattarai, M. S. El Moursi, E. F. El-Saadany, and S. Kamalasadan, "A dynamic coordination control architecture for reactive power capability enhancement of the dfig-based wind power generation," *IEEE Transactions on Power Systems*, vol. 35, no. 4, pp. 3051–3064, 2020.

54. N. Gurung, R. Bhattarai, and S. Kamalasadan, "Optimal oscillation damping controller design for large-scale wind integrated power grid," *IEEE Transactions on Industry Applications*, vol. 56, no. 4, pp. 4225–4235, 2020.

55. A. R. Nair, R. Bhattarai, and S. Kamalasadan, "Mutual inductance estimation based sensorless adaptive variance controller for doubly fed induction generator," *IEEE Transactions on Industry Applications*, vol. 56, no. 6, pp. 7166–7175, 2020.

56. A. R. Nair, R. Bhattarai, M. Smith, and S. Kamalasadan, "Parametrically robust identification based sensorless control approach for doubly fed induction generator," *IEEE Transactions on Industry Applications*, vol. 57, no. 1, pp. 1024–1034, 2020.

57. S. Patel, M. Ahmed, and S. Kamalasadan, "A novel energy storage-based net-load smoothing and shifting architecture for high amount of photovoltaics integrated power distribution system," *IEEE Transactions on Industry Applications*, vol. 56, no. 3, pp. 3090–3099, 2020.

58. A. Thakallapelli, A. R. Nair, B. D. Biswas, and S. Kamalasadan, "Frequency regulation and control of grid-connected wind farms based on online reduced-order modeling and adaptive control," *IEEE Transactions on Industry Applications*, vol. 56, no. 2, pp. 1980–1989, 2020.

59. S. Hasan, N. Gurung, K. M. Muttaqi, and S. Kamalasadan, "Electromagnetic field-based control of distributed generator units to mitigate motor starting voltage dips in power grids," *IEEE Transactions on Applied Superconductivity*, vol. 29, no. 2, pp. 1–4, 2019.

60. S. Hasan, A. R. Nair, R. Bhattarai, S. Kamalasadan, and K. M. Muttaqi, "A coordinated optimal feedback control of distributed generators for mitigation of motor starting voltage sags in distribution networks," *IEEE Transactions on industry applications*, vol. 56, no. 1, pp. 864–875, 2019.

61. S. J. Hossain, B. D. Biswas, R. Bhattarai, M. Ahmed, S. Abdelrazek, and S. Kamalasadan, "Operational value-based energy storage management for photovoltaic (pv) integrated active power distribution systems," *IEEE Transactions on Industry Applications*, vol. 55, no. 5, pp. 5320–5330, 2019.

62. A. Thakallapelli, S. Kamalasadan, K. M. Muttaqi, and M. T. Hagh, "A synchronization control technique for soft connection of doubly fed induction generator based wind turbines to the power grids," *IEEE Transactions on Industry Applications*, vol. 55, no. 5, pp. 5277–5288, 2019.

63. S. Thakallapelli Abilash: Kamalasadan, "Alternating direction method of multipliers (admms) based distributed approach for wide-area control," *IEEE Transactions on Industry Applications*, vol. 55, no. 3, pp. 3215–3227, 2019.

64. R. Bhattarai, N. Gurung, S. Ghosh, and S. Kamalasadan, "Parametrically robust dynamic speed estimation based control for doubly fed induction generator," *IEEE Transactions on Industry Applications*, vol. 54, no. 6, pp. 6529–6542, 2018.

65. R. Bhattarai, N. Gurung, and S. Kamalasadan, "Dual mode control of a three-phase inverter using minimum variance adaptive architecture," *IEEE Transactions on Industry Applications*, vol. 54, no. 4, pp. 3868–3880, 2018.

66. R. Bhattarai, N. Gurung, A. Thakallapelli, and S. Kamalasadan, "Reduced-order state observer-based feedback control methodologies for doubly fed induction machine," *IEEE Transactions on Industry Applications*, vol. 54, no. 3, pp. 2845–2856, 2018.

67. S. J. Hossain, T. G. Paul, R. Bisht, A. Suresh, and S. Kamalasadan, "An integrated battery optimal power dispatch architecture for end-user-driven microgrid in islanded and grid-connected mode of operation," *IEEE Transactions on Industry Applications*, vol. 54, no. 4, pp. 3806–3819, 2018.

68. A. Thakallapelli, S. Ghosh, and S. Kamalasadan, "Development and applicability of online passivity enforced wide-band multi-port equivalents for hybrid transient simulation," *IEEE Transactions on Power Systems*, vol. 34, no. 3, pp. 2302–2311, 2018.

69. A. Thakallapelli, S. J. Hossain, and S. Kamalasadan, "Coherency and online signal selection based wide area control of wind integrated power grid," *IEEE Transactions on Industry Applications*, vol. 54, no. 4, pp. 3712–3722, 2018.

70. T. G. Paul, S. J. Hossain, S. Ghosh, P. Mandal, and S. Kamalasadan, "A quadratic programming based optimal power and battery dispatch for grid connected micro grid," *IEEE Transactions on Industry Applications*, vol. 53, no. 99, pp. 1–12, 2017.

71. R. Yousefian, R. Bhattarai, and S. Kamalasadan, "Transient stability enhancement of power grid with integrated wide area control of wind farms and synchronous generators," *IEEE Transactions on Power Systems*, vol. 32, no. 6, pp. 4818–4831, 2017.

72. R. Yousefian and S. Kamalasadan, "A review of neural network based machine learning approaches for rotor angle stability control," *arXiv preprint arXiv:1701.01214*, 2017.

73. S. Abdelrazek and S. Kamalasadan, "A weather-based optimal storage management algorithm for pv capacity firming," *IEEE Transactions on Industry Applications*, vol. 52, no. 6, pp. 5175–5184, 2016.

74. S. A. Abdelrazek and S. Kamalasadan, "Integrated pv capacity firming and energy time shift battery energy storage management using energy-oriented optimization," *IEEE Transactions on Industry Applications*, vol. 52, no. 3, pp. 2607–2617, 2016.

75. S. Ghosh and S. Kamalasadan, "An energy function-based optimal control strategy for output stabilization of integrated dfig-flywheel energy storage system," *IEEE Transactions on Smart Grid*, vol. 8, no. 4, pp. 1922–1931, 2016.

76. S. Ghosh and S. Kamalasadan, "An integrated dynamic modeling and adaptive controller approach for flywheel augmented dfig based wind system," *IEEE Transactions on Power Systems*, vol. 32, no. 3, pp. 2161–2171, 2016.

77. S. Moghadasi and S. Kamalasadan, "Optimal fast control and scheduling of power distribution system using integrated receding horizon control and convex conic programming," *IEEE Transactions on Industry Applications*, vol. 52, no. 3, pp. 2596–2606, 2016.

78. R. Yousefian and S. Kamalasadan, "A lyapunov function based optimal hybrid power system controller for improved transient stability," *Electric Power Systems Research*, vol. 137, pp. 6–15, 2016.

79. R. Yousefian and S. Kamalasadan, "Energy function inspired value priority based global wide-area control of power grid," *IEEE Transactions on Smart Grid*, vol. 9, no. 2, pp. 552–563, 2016.

80. R. Yousefian, A. Sahami, and S. Kamalasadan, "Hybrid transient energy function-based real-time optimal wide-area damping controller," *IEEE Transactions on Industry Applications*, vol. 53, no. 2, pp. 1506–1516, 2016.

81. S. Ghosh, S. Kamalasadan, N. Senroy, and J. Enslin, "Doubly fed induction generator (dfig)-based wind farm control framework for primary frequency and inertial response application," *IEEE Transactions on Power Systems*, vol. 31, no. 3, pp. 1861–1871, 2015.

82. N. Kulkarni, S. Kamalasadan, and S. Ghosh, "An integrated method for optimal placement and tuning of a power system stabilizer based on full controllability index and generator participation," *IEEE Transactions on Industry Applications*, vol. 51, no. 5, pp. 4201–4211, 2015.

83. A. Ramirez, A. Mehrizi-Sani, D. Hussein, M. Matar, M. Abdel-Rahman, J. J. Chavez, A. Davoudi, and S. Kamalasadan, "Application of balanced realizations for model-order reduction of dynamic power system equivalents," *IEEE Transactions on Power Delivery*, vol. 31, no. 5, pp. 2304–2312, 2015.

84. S. K. Reza Yousefian, "Design and real-time implementation of optimal power system wide area system-centric controller based on temporal difference learning," *IEEE Transactions on Industry Applications*, 2015.

85. N. Mendis, K. M. Muttaqi, S. Perera, and S. Kamalasadan, "An effective power management strategy for a wind–diesel–hydrogen-based remote area power supply system to meet fluctuating demands under generation uncertainty," *IEEE Transactions on Industry Applications*, vol. 51, no. 2, pp. 1228–1238, 2014.

86. S. Kamalasadan, G. D. Swann, and R. Yousefian, "A novel system-centric intelligent adaptive control architecture for power system stabilizer based on adaptive neural networks," *IEEE Systems Journal*, vol. 8, no. 4, pp. 1074–1085, 2013.

87. A. Manickam, S. Kamalasadan, D. Edwards, and S. Simmons, "A novel self-evolving intelligent multiagent framework for power system control and protection," *IEEE Systems Journal*, vol. 8, no. 4, pp. 1086–1095, 2013.

88. S. Kamalasadan and G. D. Swann, "A novel system-centric intelligent adaptive control architecture for damping interarea mode oscillations in power system," *IEEE Transactions on industry applications*, vol. 47, no. 3, pp. 1487–1497, 2011.

89. S. Kamalasadan and G. D. Swann, "Power systems engineering committee-a novel system-centric intelligent adaptive control architecture for damping interarea mode oscillations in power system," *IEEE Transactions on Industry Applications*, vol. 47, no. 3, p. 1487, 2011.

90. A. K. Srivastava, S. Kamalasadan, D. Patel, S. Sankar, and K. S. Al-Olimat, "Electricity markets: An overview and comparative study," *International Journal of Energy Sector Management*, vol. 5, no. 2, pp. 169–200, 2011.

91. S. Kamalasadan and A. A. Ghandakly, "A neural network parallel adaptive controller for fighter aircraft pitch-rate tracking," *IEEE Transactions on Instrumentation and Measurement*, vol. 60, no. 1, pp. 258–267, 2010.

92. A. K. Srivastava, B. Annabathina, and S. Kamalasadan, "The challenges and policy options for integrating plug-in hybrid electric vehicle into the electric grid," *The Electricity Journal*, vol. 23, no. 3, pp. 83–91, 2010.

93. S. Kamalasadan, D. Thukaram, and A. Srivastava, "A new intelligent algorithm for online voltage stability assessment and monitoring," *International Journal of Electrical Power & Energy Systems*, vol. 31, no. 2-3, pp. 100–110, 2009.

94. S. Kamalasadan and A. A. Ghandakly, "A novel multiple reference model adaptive control approach for multimodal and dynamic systems," *Control and intelligent systems*, vol. 36, no. 2, pp. 119–128, 2008.

95. S. Kamalasadan, "A novel multi-agent controller for dynamic systems based on supervisory loop approach.," *Eng. Lett.*, vol. 14, no. 2, pp. 81–88, 2007.

96. S. Kamalasadan, "An adaptive controller for multimodal systems based on fuzzy reference model generator.," *Engineering Letters*, vol. 14, no. 1, 2007.

97. S. Kamalasadan and A. A. Ghandakly, "A fuzzy logic based multiple reference model adaptive control algorithm for dynamic systems," *International Journal of Computers and Their Applications*, vol. 14, no. 3, p. 150, 2007.

98. S. Kamalasadan and A. A. Ghandakly, "A neural network parallel adaptive controller for dynamic system control," *IEEE Transactions on Instrumentation and Measurement*, vol. 56, no. 5, pp. 1786–1796, 2007.

99. S. Kamalasadan and A. A. Ghandakly, "Multiple fuzzy reference model adaptive controller design for pitch-rate tracking," *IEEE Transactions on Instrumentation and Measurement*, vol. 56, no. 5, pp. 1797–1808, 2007.
100. A. Hande and S. Kamalasadan, "An electromechanical transfer circuit to measure individual battery voltages in series packs," *Journal of power sources*, vol. 162, no. 1, pp. 719–726, 2006.
101. S. Kamalasadan, A. A. Ghandakly, and K. S. Al-Olimat, "A novel fuzzy multiple reference model adaptive controller design.," *International Journal of Fuzzy Systems*, vol. 8, no. 3, 2006.
102. S. Kamalasadan, A. A. Ghandakly, and D. Thukaram, "An artificial neural network algorithm for voltage stability monitoring and assessment," *International Journal of Computers and Their Applications*, vol. 12, no. 2, p. 93, 2005.
103. S. Kamalasadan, "Application of artificial intelligence techniques in power systems," *Asian Institute of Technology, Bangkok1998*, 1998.

Conference Papers

1. S. Kumar, S. Kumar, S. Kurm, K. Murari, M. S. Hasan, and S. Kamalasadan, "A st-smo sogi pll and lut based sensorless vector controlled pmasyrm drive for spv-battery fed light electric vehicle," in *2025 IEEE Texas Power and Energy Conference (TPEC)*, IEEE, 2025, pp. 1–6.
2. T. Prasad, S. Kumar, S. Kurm, K. Murari, M. S. Hasan, and S. Kamalasadan, "Hydrogen-pv-battery system for hybrid ev charging stations with grid integration and islanding control by using dhogi-qt2 based pll," in *2025 IEEE Texas Power and Energy Conference (TPEC)*, IEEE, 2025, pp. 1–6.
3. R. Chaudhary, V. Singh, A. Mathur, U. Yadav, K. Murari, and S. Kamalasadan, "Direct truncation and routh approximation assisted reduced order modelling of islanded microgrid," in *2024 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2024, pp. 1–6.
4. Z. Dong, A. Ingalalli, M. Al Mamun, G. Bharati, S. Kamalasadan, S. Chakraborty, S. Paudyal, and A. Ashok, "An emt-phasor co-simulation setup for studying reconfiguration of distribution system with inverter based resources," in *2024 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2024, pp. 1–5.
5. M. S. Hasan, M. H. Arifin, S. Kamalasadan, M. Smith, and A. Crosby, "System identification based frequency nadir improvement with synchronous condenser and bess in bulk transmission grid," in *2024 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2024, pp. 1–8.
6. G. Meena, A. Mathur, V. Singh, K. Murari, and S. Kamalasadan, "A generic load flow solution for droop-controlled ac microgrids considering electric vehicle loads," in *2024 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, IEEE, 2024, pp. 1–6.
7. G. Meena, A. Mathur, V. Singh, K. Murari, and S. Kamalasadan, "Efficient evaluation of short-circuit faults in active distribution networks," in *2024 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, IEEE, 2024, pp. 1–6.
8. K. Murari, S. Paul, N. P. Padhy, and S. Kamalasadan, "A novel distribution use of network (duon) pricing algorithm for efficient charging of loads and distributed generations," in *2024 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2024, pp. 1–6.
9. S. Paul, K. Murari, N. P. Padhy, and S. Kamalasadan, "Predictor-corrector accelerated admm method for the socp-relaxed ac-dc optimal power flow," in *2024 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2024, pp. 1–5.

10. S. Paul, A. Sharma, K. Murari, M. S. Hasan, N. P. Padhy, and S. Kamalasadan, "A fully distributed consensus admm approach for loss minimization in ac-dc radial distribution networks," in *2024 IEEE Texas Power and Energy Conference (TPEC)*, IEEE, 2024, pp. 1–6.
11. R. Ramachandran, M. S. Hasan, and S. Kamalasadan, "Vulnerability assessment tool for large radial distribution system with high integration of distributed energy resources," in *2024 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2024, pp. 1–7.
12. R. Ramachandran and S. Kamalasadan, "Impedance and reactive power sensitivity-based vulnerability assessment of power grid with high penetration of distributed energy resources," in *2024 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2024, pp. 1–7.
13. M. S. Tariq and S. Kamalasadan, "A unified power flow controller (upfc) based optimal power flow methodology for balancing electric grid line-loading," in *2024 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2024, pp. 1–8.
14. M. Al Mamun, S. Paudyal, and S. Kamalasadan, "Dynamics of photovoltaic system with smart inverter functions using phasor domain model," in *2023 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2023, pp. 1–6.
15. M. Al Mamun, S. Paudyal, and S. Kamalasadan, "Efficient dynamic simulation of unbalanced distribution grids with distributed generators," in *2023 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2023, pp. 1–6.
16. A. I. Aygun and S. Kamalasadan, "Optimal energy management of power grid with electric vehicles and flexible loads," in *2023 IEEE International Conference on Power Electronics, Smart Grid, and Renewable Energy (PESGRE)*, IEEE, 2023, pp. 1–6.
17. V. Cecchi, C. S. Smith-Orr, P. Mandal, and S. Kamalasadan, "Power engineering curriculum update with situative pedagogy and concept maps as evaluation tool," in *2023 ASEE Annual Conference & Exposition*, 2023.
18. M. M.-U.-T. Chowdhury, M. S. Hasan, and S. Kamalasadan, "A distributed optimal power flow (d-opf) model for radial distribution networks with second-order cone programming (socp)," in *2023 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2023, pp. 1–8.
19. M. M.-U.-T. Chowdhury, M. S. Hasan, and S. Kamalasadan, "Real-time optimal power flow (opf) model with second order cone programming (socp) for radial power distribution networks," in *2023 IEEE International Conference on Energy Technologies for Future Grids (ETFG)*, IEEE, 2023, pp. 1–5.
20. M. M.-U.-T. Chowdhury, M. S. Hasan, K. Murari, and S. Kamalasadan, "Socp based novel opf analysis model for ac-dc hybrid power distribution networks," in *2023 IEEE International Conference on Power Electronics, Smart Grid, and Renewable Energy (PESGRE)*, IEEE, 2023, pp. 1–6.
21. M. S. Hasan, S. J. Hossain, and S. Kamalasadan, "An optimization-based volt/var control approach with increased penetration of inverter-based resources (ibrs) in the bulk and distribution grid," in *2023 IEEE International Conference on Power Electronics, Smart Grid, and Renewable Energy (PESGRE)*, IEEE, 2023, pp. 1–6.
22. M. S. Hasan and S. Kamalasadan, "Modified equivalent network approximation based distributed optimal power flow for bulk transmission grid," in *2023 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2023, pp. 1–7.
23. M. S. Hasan and S. Kamalasadan, "Non-linear programming based optimal power flow (n-opf) for bulk transmission grid: Modeling and comparative study," in *2023 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2023, pp. 1–9.

24. A. R. Nair, S. Kamalasadan, and M. Smith, "Integrated policy-driven adaptive control framework for grid-tied inverters per frequency decomposition based optimization," in *2023 IEEE International Conference on Power Electronics, Smart Grid, and Renewable Energy (PESGRE)*, IEEE, 2023, pp. 1–6.

25. O. Ogundairo and S. Kamalasadan, "Multi-period integrated transmission and distribution optimal power flow simulation using linear decision approach," in *2023 IEEE International Conference on Energy Technologies for Future Grids (ETFG)*, IEEE, 2023, pp. 1–6.

26. S. Paul, K. Murari, N. P. Padhy, and S. Kamalasadan, "A consensus admm based fully distributed peer-to-peer approach for multi-objective residential community energy management," in *2023 IEEE International Conference on Energy Technologies for Future Grids (ETFG)*, IEEE, 2023, pp. 1–6.

27. O. Q. Simental, P. Mandal, E. Galvan, and S. Kamalasadan, "Resilience evaluation for power distribution systems impacted by winter storms," in *2023 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2023, pp. 1–7.

28. C. S. Smith-Orr, V. Cecchi, P. Mandal, and S. Kamalasadan, "Board 348: Nsf grantees poster session: Power engineering curriculum update: Preliminary evaluation of student concept maps on energy forecasting," in *2023 ASEE Annual Conference & Exposition*, 2023.

29. A. Suresh, K. Murari, and S. Kamalasadan, "Current injection based quasi-static time series load flow algorithm for distribution system with multiple distributed energy resources," in *2023 IEEE International Conference on Energy Technologies for Future Grids (ETFG)*, IEEE, 2023, pp. 1–6.

30. A. Suresh, S. Paudyal, and S. Kamalasadan, "A sequence component based continuation power flow model for electric power grid considering transmission and distribution system," in *2023 IEEE International Conference on Energy Technologies for Future Grids (ETFG)*, IEEE, 2023, pp. 1–6.

31. A. Abbas, R. Ariwoola, B. Chowdhury, S. Kamalasadan, and Y. Lin, "Evaluation of equivalent battery model representations for thermostatically controlled loads in commercial buildings," in *2022 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2022, pp. 1–6.

32. F. Al Hasnain, S. Kamalasadan, and M. Smith, "Electro-mechanical mode identification of a bess integrated grid system through subspace identification method," in *2022 IEEE Global Conference on Computing, Power and Communication Technologies (GlobConPT)*, IEEE, 2022, pp. 1–6.

33. R. Ariwoola and S. Kamalasadan, "A simplified functional hybrid operation mode for grid-interactive building energy management," in *2022 IEEE International Conference on Power Electronics, Smart Grid, and Renewable Energy (PESGRE)*, IEEE, 2022, pp. 1–6.

34. A. I. Aygun, A. Joshi, and S. Kamalasadan, "An alternating direction method of multipliers (admm) based optimal electric vehicle fleets charging in active electric distribution network," in *2022 IEEE Global Conference on Computing, Power and Communication Technologies (GlobConPT)*, IEEE, 2022, pp. 1–6.

35. A. I. Aygun and S. Kamalasadan, "An optimal approach to manage electric vehicle fleets routing," in *2022 IEEE International Conference on Power Electronics, Smart Grid, and Renewable Energy (PESGRE)*, IEEE, 2022, pp. 1–6.

36. A. I. Aygun and S. Kamalasadan, "Centralized charging approach to manage electric vehicle fleets for balanced grid," in *2022 IEEE International Conference on Power Electronics, Smart Grid, and Renewable Energy (PESGRE)*, IEEE, 2022, pp. 1–6.

37. B. D. Biswas and S. Kamalasadan, "Alternative sdp relaxed optimal power flow formulation for radial distribution networks," in *2022 IEEE International Conference on Power Electronics, Smart Grid, and Renewable Energy (PESGRE)*, IEEE, 2022, pp. 1–6.

38. B. D. Biswas and S. Kamalasadan, "Semidefinite program based optimal power flow formulation with voltage regulators in multiphase distribution networks," in *2022 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2022, pp. 1–5.

39. B. Dipan Biswas and S. Kamalasadan, "Semidefinite program based optimal power flow formulation with voltage regulators in multiphase distribution networks," in *2020 IEEE Industry Applications Society Annual Meeting*, 2022.

40. M. S. Hasan and S. Kamalasadan, "Optimization of der integrated distribution system by sequential quadratic programming (sqp)," in *2022 IEEE Global Conference on Computing, Power and Communication Technologies (GlobConPT)*, IEEE, 2022, pp. 1–6.

41. A. Inaolaji, A. Savasci, S. Paudyal, and S. Kamalasadan, "A consensus admm-based distributed volt-var optimization for unbalanced distribution networks," in *2022 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2022, pp. 1–8.

42. A. Ingalalli, S. Kamalasadan, Z. Dong, G. Bharati, and S. Chakraborty, "An extended q-routing-based event-driven dynamic reconfiguration of networked microgrids," in *2022 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2022, pp. 1–6.

43. M. A. I. Khan, S. Paudyal, and S. Kamalasadan, "Efficient large-scale simulation of integrated transmission and distribution systems," in *2022 IEEE Kansas Power and Energy Conference (KPEC)*, IEEE, 2022, pp. 1–6.

44. A. R. Nair, S. Patel, S. Kamalasadan, M. Smith, and S. Siddiqui, "A state-space based analysis of synchronous condenser inter-parametric variations in wind integrated weak power grid," in *2022 IEEE Global Conference on Computing, Power and Communication Technologies (GlobConPT)*, IEEE, 2022, pp. 1–5.

45. O. Ogundairo, S. Kamalasadan, et al., "Integrated transmission and distribution optimal power flow simulation using linear decision approach," in *2022 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, IEEE, 2022, pp. 1–6.

46. M. Smith and S. Kamalasadan, "Hybrid parametrically optimized adaptive control framework for generator reactor pressurizer," in *2022 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2022, pp. 1–8.

47. A. Abbas, R. Ariwoola, S. Kamalasadan, and B. Chowdhury, "Evaluation of hybrid commercial building models for grid interactive building simulations," in *2021 North American Power Symposium (NAPS)*, IEEE, 2021, pp. 1–6.

48. F. Al Hasnain, S. J. Hossain, and S. Kamalasadan, "Investigation and design of a measurement based electro-mechanical oscillation mode identification and detection in power grid," in *2021 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2021, pp. 1–5.

49. M. Al Mamun, S. Paudyal, and S. Kamalasadan, "Real-time power system dynamic simulation using windowing based waveform relaxation method," in *2021 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2021, pp. 1–5.

50. R. Ariwoola and S. Kamalasadan, "Integrated hybrid thermal dynamics model for residential building," in *2021 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2021, pp. 1–8.

51. F. Atchison, V. Cecchi, and S. Kamalasadan, "Improvement of customer class load schedules utilizing ami measurements," in *2021 North American Power Symposium (NAPS)*, IEEE, 2021, pp. 1–6.

52. B. Banu, M. Smith, and S. Kamalasadan, "Control of transient overvoltage for inverter only based microgrids in power distribution system," in *2021 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2021, pp. 1–5.

53. B. Banu, M. Smith, and S. Kamalasadan, "Novel protection method for fully inverter-based distribution system microgrid," in *2021 North American Power Symposium (NAPS)*, IEEE, 2021, pp. 01–06.

54. B. D. Biswas and S. Kamalasadan, "Distributed convex optimal power flow model based on alternating direction method of multipliers for power distribution system," in *2021 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2021, pp. 1–6.

55. B. D. Biswas, S. Kamalasadan, and S. Paudyal, "A two-stage combined uc-opf model using mixed integer and semi-definite programming," in *2021 IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT)*, IEEE, 2021, pp. 1–5.

56. V. Cecchi, C. Smith-Orr, F. Atchison, S. Kamalasadan, P. Mandal, and I. Lopez, "Assessing student perceptions of emerging concepts in power & energy systems via concept maps: Rubric development," in *2021 IEEE Frontiers in Education Conference (FIE)*, IEEE, 2021, pp. 1–4.

57. B. Dipan Biswas, S. Kamalasadan, and S. Paudyal, "A two-stage combined uc-opf model using mixed integer and semi-definite programming," in *IEEE Power & Energy Society Innovative Smart Grid Technologies Conference*, 2021.

58. A. Inaolaji, A. Savasci, S. Paudyal, and S. Kamalasadan, "Accuracy of phase-decoupled and phase-coupled distribution grid power flow models," in *2021 IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT)*, IEEE, 2021, pp. 1–5.

59. A. Ingalalli and S. Kamalasadan, "A universal multiple inverter control architecture with droop for unbalanced distribution grid," in *2021 IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT)*, IEEE, 2021, pp. 1–5.

60. A. Ingalalli and S. Kamalasadan, "Participation of networked microgrids in energy-as-a-service model for enhancing grid resiliency," in *2021 IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT)*, IEEE, 2021, pp. 1–5.

61. D. A. R. de Jesús, P. Mandal, T. Senjyu, and S. Kamalasadan, "Unsupervised hybrid deep generative models for photovoltaic synthetic data generation," in *2021 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2021, pp. 1–5.

62. K. Murari and S. Kamalasadan, "Graph based power flow approach for single phase distribution system with distributed generators (dgs) considering all load types," in *2021 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2021, pp. 1–8.

63. K. Murari, N. P. Padhy, and S. Kamalasadan, "Backward-forward sweep based power flow algorithm for radial and meshed ac-dc distribution system," in *2021 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2021, pp. 1–8.

64. S. Patel and S. Kamalasadan, "A graph theory-based two-level spectral clustering approach for active power grouping of der integrated power distribution system," in *2021 IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT)*, IEEE, 2021, pp. 1–5.

65. A. Savasci, A. Inaolaji, S. Paudyal, and S. Kamalasadan, "Efficient distribution grid optimal power flow with discrete control of legacy grid devices," in *2021 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2021, pp. 1–5.

66. A. Suresh, S. Kamalasadan, and S. Paudyal, "A novel three-phase transmission and unbalance distribution co-simulation power flow model for long term voltage stability margin assessment," in *2021 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2021, pp. 1–5.

67. B. Azibek, A. Abukhan, H. K. Nunna, B. Mukatov, S. Kamalasadan, and S. Doolla, "Hosting capacity enhancement in low voltage distribution networks: Challenges and solutions," in *2020 IEEE International Conference on Power Electronics, Smart Grid and Renewable Energy (PESGRE2020)*, IEEE, 2020, pp. 1–6.

68. R. Bhattarai, J. Qi, J. Wang, and S. Kamalasadan, "Adaptive droop control of coupled microgrids for enhanced power sharing and small-signal stability," in *2020 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2020, pp. 1–5.

69. R. Bisht, A. Suresh, and S. Kamalasadan, "Higher order identification and control of single phase inverters for volt-var compensation," in *2020 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2020, pp. 1–5.

70. M. M.-U.-T. Chowdhury and S. Kamalasadan, "An angle included optimal power flow (opf) model for power distribution network using second order cone programming (socp)," in *2020 IEEE Industry Applications Society Annual Meeting*, IEEE, 2020, pp. 1–7.

71. J. Geis-Schroer, A. R. Nair, S. Patel, and S. Kamalasadan, "Modeling and analysis of weak grid considering phase locked loop and synchronous condenser effect on grid stability," in *2020 IEEE International Conference on Power Electronics, Smart Grid and Renewable Energy (PESGRE2020)*, IEEE, 2020, pp. 1–6.

72. Y. Gupta, R. Vaidya, H. K. Nunna, S. Kamalasadan, and S. Doolla, "Optimal pv–battery sizing for residential and commercial loads considering grid outages," in *2020 IEEE International Conference on Power Electronics, Smart Grid and Renewable Energy (PESGRE2020)*, IEEE, 2020, pp. 1–5.

73. A. Ingalalli and S. Kamalasadan, "An integrated state-space model for grid feeding and grid forming inverters," in *2020 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, IEEE, 2020, pp. 1–6.

74. A. Joshi, S. Kamalasadan, et al., "Control uncertainty based lqr for frequency regulation using distributed energy resources," in *2020 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, IEEE, 2020, pp. 1–6.

75. A. Joshi and S. Kamalasadan, "Inverter angle minimization based control approach for dispatch of distributed energy resources with hybrid energy storage system," in *2020 IEEE Industry Applications Society Annual Meeting*, IEEE, 2020, pp. 1–7.

76. A. Joshi, A. Suresh, and S. Kamalasadan, "Control and dispatch of distributed energy resources with improved frequency regulation using fully active hybrid energy storage system," in *2020 IEEE International Conference on Power Electronics, Smart Grid and Renewable Energy (PESGRE2020)*, IEEE, 2020, pp. 1–6.

77. A. R. Nair, R. Bhattarai, M. Smith, and S. Kamalasadan, "Energy function based modified integrated control architecture for grid connected inverter," in *2020 IEEE Industry Applications Society Annual Meeting*, IEEE, 2020, pp. 1–7.

78. A. R. Nair, M. Smith, and S. Kamalasadan, "Optimization based integrated adaptive control architecture for grid connected inverter (gci)," in *2020 IEEE Energy Conversion Congress and Exposition (ECCE)*, IEEE, 2020, pp. 3112–3118.

79. O. Ogundairo, A. R. Nair, M. Smith, and S. Kamalasadan, "Online adaptive damping controller architecture for wind integrated power grid," in *2020 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, IEEE, 2020, pp. 1–6.

80. S. Patel, K. Murari, and S. Kamalasadan, "A spectral clustering based distributed control of distributed energy resources (ders) integrated power distribution system," in *2020 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, IEEE, 2020, pp. 1–6.

81. A. Suresh, R. Bisht, and S. Kamalasadan, "Admm based lqr for voltage regulation using distributed energy resources," in *2020 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, IEEE, 2020, pp. 1–6.

82. R. Bisht, A. Suresh, and S. Kamalasadan, "Multiple single phase inverters based combined active power management and voltage regulation of power distribution system based on a novel optimal control architecture," in *2019 North American Power Symposium (NAPS)*, IEEE, 2019, pp. 1–6.

83. B. D. Biswas, S. Moghadasi, S. Kamalasadan, and S. Paudyal, "Integrated transmission systems convex optimal power flow considering security constraints," in *2019 North American Power Symposium (NAPS)*, IEEE, 2019, pp. 1–6.

84. S. J. Hossain and S. Kamalasadan, "Combined deterministic-stochastic online subspace identification for power system mode estimation and oscillation classification," in *2019 IEEE Industry Applications Society Annual Meeting*, IEEE, 2019, pp. 1–9.

85. S. J. Hossain and S. Kamalasadan, "Online measurement based power system reduced order model generation and validation," in *2019 North American Power Symposium (NAPS)*, IEEE, 2019, pp. 1–6.

86. M. A. I. Khan, A. Suresh, S. Paudyal, and S. Kamalasadan, "Decoupled and unified approaches for solving transmission and distribution co-simulations," in *2019 North American Power Symposium (NAPS)*, IEEE, 2019, pp. 1–6.

87. A. Nair, R. Bhattarai, and S. Kamalasadan, "Parametrically robust mutual inductance estimation based adaptive control architecture for doubly fed induction generator (dfig)," in *2019 IEEE Energy Conversion Congress and Exposition (ECCE)*, vol. 1, 2019, pp. 434–441.

88. A. R. Nair, R. Bhattarai, and S. Kamalasadan, "A sensorless adaptive grid side control approach for doubly fed induction generator (dfig)," in *2019 IEEE Industry Applications Society Annual Meeting*, 10.1109/IAS.2019.8912337, vol. 1, 2019, pp. 1–8.

89. A. Sahami and S. Kamalasadan, "Potential energy prediction based control for transient stability enhancement," in *2019 IEEE Industry Applications Society Annual Meeting, Baltimore*, vol. 1, 2019, pp. 1–8.

90. A. Suresh, S. J. Hossain, S. Abdelrazek, and S. Kamalasadan, "Online power profile based universal battery degradation methodology suitable for various battery types," in *2019 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2019, pp. 1–5.

91. M. Ahmed and S. Kamalasadan, "An approach for local net-load ramp rate control using integrated energy storage based on least square error minimization technique," in *2018 IEEE Power and Energy Conference at Illinois (PECI)*, IEEE, 2018, pp. 1–6.

92. M. Ahmed and S. Kamalasadan, "An approach for net-load management to reduce intermittency and smooth the power output on distribution feeders with high pv penetration," in *2018 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2018, pp. 1–9.

93. R. Bhattarai, S. J. Hossain, J. Qi, J. Wang, and S. Kamalasadan, "Sustained system oscillation by malicious cyber attacks on distributed energy resources," in *2018 IEEE power & energy society general meeting (PESGM)*, IEEE, 2018, pp. 1–5.

94. R. Bisht, S. Subramaniam, R. Bhattarai, and S. Kamalasadan, "Active and reactive power control of single phase inverter with seamless transfer between grid-connected and islanded mode," in *2018 IEEE Power and Energy Conference at Illinois (PECI)*, IEEE, 2018, pp. 1–8.

95. R. Bisht, S. Subramaniam, R. Bhattarai, and S. Kamalasadan, "Adaptive minimum variance control of grid connected single phase inverters in synchronously rotating dq reference frame," in *2018 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2018, pp. 1–10.

96. N. Gurung, R. Bhattarai, and S. Kamalasadan, "Reduced order model based optimal oscillation damping controller design for doubly fed induction generator (dfig) integrated power grid," in *2018 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2018, pp. 1–10.

97. N. Gurung and S. Kamalasadan, "Power system oscillation damping capability of doubly fed induction generator (dfig)," in *2018 IEEE/PES Transmission and Distribution Conference and Exposition (T&D)*, IEEE, 2018, pp. 1–9.

98. S. Hasan, K. M. Muttaqi, R. Bhattarai, and S. Kamalasadan, "A coordinated control approach for mitigation of motor starting voltage dip in distribution feeders," in *2018 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2018, pp. 1–6.

99. S. Hasan, K. M. Muttaqi, and S. Kamalasadan, "An approach to minimize the motor starting voltage dip using voltage support dg controller," in *2018 IEEE International Conference on Applied Superconductivity and Electromagnetic Devices (ASEMD)*, IEEE, 2018, pp. 1–2.

100. S. J. Hossain, R. Bhattarai, R. Yousefian, and S. Kamalasadan, "Adaptive wide area damping controller for distributed energy resources integrated power grid," in *2018 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2018, pp. 1–5.

101. S. J. Hossain and S. Kamalasadan, "Investigation on evaluating the unmodeled dynamics of power system and its effects on characterizing power system oscillations," in *2018 North American Power Symposium (NAPS)*, IEEE, 2018, pp. 1–6.

102. A. Sahami and S. Kamalasadan, "Prediction and enhancement of power system transient stability using taylor series," in *2018 North American Power Symposium (NAPS)*, IEEE, 2018, pp. 1–6.

103. A. Sahami, R. Yousefian, and S. Kamalasadan, "An approach based on potential energy balance for transient stability improvement in modern power grid," in *2018 IEEE Power and Energy Conference at Illinois (PECI)*, IEEE, 2018, pp. 1–7.

104. S. R. Shukla, S. Paudyal, and S. Kamalasadan, "Tight conic formulation of unit commitment problem and comparison with minlp/milp formulations," in *2018 IEEE Power & Energy Society General Meeting (PESGM)*, IEEE, 2018, pp. 1–5.

105. A. Thakallapelli and S. Kamalasadan, "An online reduced order modeling based frequency regulation adaptive control architecture for wind integrated power grid," in *2018 IEEE Industry Applications Society Annual Meeting (IAS)*, IEEE, 2018, pp. 1–8.

106. S. Ghosh, R. Bhattarai, and S. Kamalasadan, "Reactive power estimation based adaptive voltage control for improved grid voltage restoration using doubly fed induction generators," in *2017 IEEE Transportation Electrification Conference (ITEC-India)*, IEEE, 2017, pp. 1–5.

107. N. Gurung, R. Bhattarai, and S. Kamalasadan, "Optimal linear-quadratic-integral controller design for doubly-fed induction generator," in *2017 IEEE Power & Energy Society General Meeting*, IEEE, 2017, pp. 1–5.

108. S. K. Rabindra Maharjan, "Secondary voltage control of power grid using voltage stability index and voltage control areas," in *2017 North American Power Symposium*, 2017.

109. A. Thakallapelli and S. Kamalasadan, "Alternating direction method of multipliers (admm) based distributed approach for wide-area control," in *2017 IEEE Industry Applications Society Annual Meeting*, 2017.

110. A. Thakallapelli and S. Kamalasadan, "Optimization based real-time frequency dependent reduced order modeling of power grid," in *2017 IEEE Power & Energy Society General Meeting*, vol. 1, 2017, pp. 1–5.

111. M. Ahmed, S. Abdelrazek, S. Kamalasadan, J. Enslin, and T. Fenimore, "Weather forecasting based intelligent distribution feeder load prediction," in *2016 IEEE Power and Energy Society General Meeting (PESGM)*, IEEE, 2016, pp. 1–5.

112. R. Bhattarai, N. Gurung, and S. Kamalasadan, "Control of grid connected inverters using minimum variance adaptive architecture," in *2016 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, IEEE, 2016, pp. 1–6.

113. R. Bhattarai, N. Gurung, and S. Kamalasadan, "Discrete real-time state observer based feedback control methodology for doubly fed induction machine," in *2016 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, IEEE, 2016, pp. 1–6.

114. R. Bhattarai, N. Gurung, and S. Kamalasadan, "Minimum variance controller based adaptive control for doubly fed induction generator," in *2016 North American power symposium (NAPS)*, IEEE, 2016, pp. 1–6.

115. R. Bhattarai, N. Gurung, and S. Kamalasadan, "Reduced order model based state feedback control of doubly fed induction generators," in *2016 IEEE Power and Energy Society General Meeting (PESGM)*, IEEE, 2016, pp. 1–5.

116. R. Bhattarai, N. Gurung, and S. Kamalasadan, "Reduced order state observer based feedback control methodologies for doubly fed induction generator (dfig)," in *2016 IEEE Industry Applications Society Annual Meeting*, IEEE, 2016, pp. 1–8.

117. E. Galvan, P. Mandal, M. Velez-Reyes, and S. Kamalasadan, "Transactive control mechanism for efficient management of evs charging in transactive energy environment," in *2016 north American power symposium (NAPS)*, IEEE, 2016, pp. 1–6.

118. T. P. George, S. Ghosh, S. Kamalasadan, M. Joshi, and D. Chandran, "A hybrid battery optimal power dispatch for grid connected micro grid," in *2016 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, IEEE, 2016, pp. 1–6.

119. S. Moghadasi and S. Kamalasadan, "Voltage security cost assessment of integrated ac-dc systems using semidefinite programming," in *2016 IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT)*, IEEE, 2016, pp. 1–5.

120. A. Thakallapelli, S. Ghosh, and S. Kamalasadan, "Real-time frequency based reduced order modeling of large power grid," in *2016 IEEE Power and Energy Society General Meeting (PESGM)*, IEEE, 2016, pp. 1–5.

121. A. Thakallapelli, S. Ghosh, and S. Kamalasadan, "Real-time reduced order model based adaptive pitch controller for grid connected wind turbines," in *2016 IEEE Industry Applications Society Annual Meeting*, IEEE, 2016, pp. 1–8.

122. A. Thakallapelli, S. J. Hossain, and S. Kamalasadan, "Coherency based online wide area control of wind integrated power grid," in *2016 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, IEEE, 2016, pp. 1–6.

123. R. Yousefian, R. Bhattarai, and S. Kamalasadan, "Direct intelligent wide-area damping controller for wind integrated power system," in *2016 IEEE Power and Energy Society General Meeting (PESGM)*, IEEE, 2016, pp. 1–5.

124. S. Abdelrazek, S. Kamalasadan, J. Enslin, and T. Fenimore, "Integrated optimal control of battery energy storage management system for energy management and pv capacity firming," in *2015 IEEE Energy Conversion Congress and Exposition (ECCE)*, IEEE, 2015, pp. 62–69.

125. S. A. Abdelrazek and S. Kamalasadan, "An optimal storage management algorithm for pv capacity firming based on weather patterns," in *2015 IEEE Industry Applications Society Annual Meeting*, IEEE, 2015, pp. 1–8.

126. M. Ahmed and S. Kamalasadan, "Energy storage pv capacity firming with forecasted power reference and optimal error minimization," in *2015 North American Power Symposium (NAPS)*, IEEE, 2015, pp. 1–6.

127. R. Bhattarai, N. Gurung, and S. Kamalasadan, "Minimum variance adaptive speed estimation technique for vector control of doubly fed induction generator," in *2015 North American Power Symposium (NAPS)*, IEEE, 2015, pp. 1–6.

128. S. Ghosh, N. Senroy, S. Mishra, and S. Kamalasadan, "Fast power system stabilizer tuning in large power systems," in *2015 IEEE Power & Energy Society General Meeting*, IEEE, 2015, pp. 1–5.

129. R. Maharjan and S. Kamalasadan, "A new approach for voltage control area identification based on reactive power sensitivities," in *2015 North American Power Symposium (NAPS)*, IEEE, 2015, pp. 1–6.

130. R. Maharjan and S. Kamalasadan, "Voltage stability index for online voltage stability assessment," in *2015 North American Power Symposium (NAPS)*, IEEE, 2015, pp. 1–6.

131. D. Mehta, A. Ravindran, B. Joshi, and S. Kamalasadan, "Graph theory based online optimal power flow control of power grid with distributed flexible ac transmission systems (d-facts) devices," in *2015 North American Power Symposium (NAPS)*, IEEE, 2015, pp. 1–6.

132. S. Moghadasi and S. Kamalasadan, "An architecture for voltage stability constrained optimal power flow using convex semi-definite programming," in *2015 North American Power Symposium (NAPS)*, IEEE, 2015, pp. 1–6.

133. R. Yousefian and S. Kamalasadan, "Value priority based optimal power system stabilization of generating resources using local and global controllers," in *2015 IEEE Power & Energy Society General Meeting*, IEEE, 2015, pp. 1–5.

134. R. Yousefian, A. Sahami, and S. Kamalasadan, "Hybrid energy function based real-time optimal wide-area transient stability controller for power system stability," in *2015 IEEE Industry Applications Society Annual Meeting*, IEEE, 2015, pp. 1–8.

135. S. Abdelrazek and S. Kamalasadan, "A novel integrated optimal battery energy management control architecture considering multiple storage functions," in *2014 North American Power Symposium (NAPS)*, IEEE, 2014, pp. 1–6.

136. S. Abdelrazek and S. Kamalasadan, "Integrated control of battery energy storage management system considering pv capacity firming and energy time shift applications," in *2014 IEEE Industry Application Society Annual Meeting*, IEEE, 2014, pp. 1–7.

137. S. A. Abdelrazek, S. Kamalasadan, and J. Enslin, "An approach for control of battery energy storage management systems considering multiple functions," in *2014 IEEE PES General Meeting— Conference & Exposition*, IEEE, 2014, pp. 1–5.

138. M. Q. Ali, R. Yousefian, E. Al-Shaer, S. Kamalasadan, and Q. Zhu, "Two-tier data-driven intrusion detection for automatic generation control in smart grid," in *2014 IEEE Conference on Communications and Network Security*, IEEE, 2014, pp. 292–300.

139. G. Deshpande and S. Kamalasadan, "An approach for micro grid management with hybrid energy storage system using batteries and ultra capacitors," in *2014 IEEE PES General Meeting— Conference & Exposition*, IEEE, 2014, pp. 1–5.

140. S. Ghosh, N. Senroy, and S. Kamalasadan, "Reduced order modeling of wind farms for inclusion in large power system simulations for primary frequency response application," in *2014 North American Power Symposium (NAPS)*, IEEE, 2014, pp. 1–6.

141. R. Maharjan and S. Kamalasadan, "A novel online adaptive sensorless identification and control of doubly fed induction generator," in *2014 IEEE PES General Meeting— Conference & Exposition*, IEEE, 2014, pp. 1–5.

142. S. Moghadasi and S. Kamalasadan, "Real-time optimal scheduling of smart power distribution systems using integrated receding horizon control and convex conic programming," in *2014 IEEE Industry Application Society Annual Meeting*, IEEE, 2014, pp. 1–7.

143. R. Yousefian and S. Kamalasadan, "An approach for real-time tuning of cost functions in optimal system-centric wide area controller based on adaptive critic design," in *2014 IEEE PES General Meeting— Conference & Exposition*, IEEE, 2014, pp. 1–5.

144. G. Cao, A. Ravindran, S. Kamalasadan, B. Joshi, and A. Mukherjee, "A cross-stack predictive control framework for multimedia applications," in *2013 IEEE International Symposium on Multimedia*, IEEE, 2013, pp. 403–404.

145. V. Cecchi, S. Kamalasadan, J. Enslin, and M. Miller, "Grid impacts and mitigation measures for increased pv penetration levels using advanced pv inverter regulation," in *2013 IEEE Energy Conversion Congress and Exposition*, IEEE, 2013, pp. 561–568.

146. B. Chowdhury, B. Parkhideh, A. Martin, Z. Salami, J. Enslin, V. Cecchi, S. Kamalasadan, and N. Maciej, "Enhancing power and energy systems concepts with laboratory experience," in *2013 IEEE Power & Energy Society General Meeting*, IEEE, 2013, pp. 1–5.

147. S. Kamalasadan and N. Kulkarni, "Novel method for optimal placement of power system stabilizer using principal component analysis," in *2013 IEEE Industry Applications Society Annual Meeting*, IEEE, 2013, pp. 1–7.

148. S. Kamalasadan and K. S. Al-Olimat, "Modeling and control of a micro-grid set up using photovoltaic arrays," in *45th Southeastern Symposium on System Theory*, IEEE, 2013, pp. 80–87.

149. M. Khanabadi and S. Kamalasadan, "Day ahead scheduling of distribution system with distributed energy resources considering demand response and energy storage," in *2013 North American Power Symposium (NAPS)*, IEEE, 2013, pp. 1–6.

150. M. Khanabadi, S. Moghadasi, and S. Kamalasadan, "Real-time optimization of distribution system considering interaction between markets," in *2013 IEEE Industry Applications Society Annual Meeting*, IEEE, 2013, pp. 1–8.

151. N. Kulkarni and S. Kamalasadan, "Optimal placement of phasor measurement units (pmu) using a novel method based on observability gramian and full observability rank," in *2013 IEEE Power & Energy Society General Meeting*, IEEE, 2013, pp. 1–5.

152. R. Maharjan and S. Kamalasadan, "Real-time simulation for active and reactive power control of doubly fed induction generator," in *2013 North American Power Symposium (NAPS)*, IEEE, 2013, pp. 1–6.

153. V. P. Tran, S. Kamalasadan, and J. Enslin, "Real-time modeling and model validation of synchronous generator using synchrophasor measurements," in *2013 North American Power Symposium (NAPS)*, IEEE, 2013, pp. 1–5.

154. R. Yousefian and S. Kamalasadan, "System-centric control architecture for wide area monitoring and control of power system," in *2013 IEEE PES Innovative Smart Grid Technologies Conference (ISGT)*, IEEE, 2013, pp. 1–7.

155. S. Kamalasadan and R. R. Ghorbani, "Novel intelligent fault-tolerant adaptive control methodology for next generation energy systems," in *2012 IEEE Industry Applications Society Annual Meeting*, IEEE, 2012, pp. 1–8.

156. S. Kamalasadan and A. Manickam, "Analysis of intelligent wide area system-centric controller and observer for power system stabilization using dhp control architecture," in *2012 IEEE Power and Energy Society General Meeting*, IEEE, 2012, pp. 1–8.

157. A. Manickam and S. Kamalasadan, "An novel approach for the design of bus management agent clusters for power system control and protection," in *2012 IEEE Power and Energy Society General Meeting*, IEEE, 2012, pp. 1–10.

158. S. Kamalasadan and A. Manickam, "An intelligent wide area system-centric controller and observer for power system stabilization using optimal dual heuristic programming (dhp) architecture," in *2011 IEEE Industry Applications Society Annual Meeting*, IEEE, 2011, pp. 1–8.

159. A. Manickam, S. Kamalasadan, D. Edwards, and S. Simmons, "Intelligent multi-agent framework for power system control and protection," in *2011 IEEE Power and Energy Society General Meeting*, IEEE, 2011, pp. 1–8.

160. J. Mitra, N. Cai, M.-Y. Chow, S. Kamalasadan, W. Liu, W. Qiao, S. N. Singh, A. K. Srivastava, S. K. Srivastava, G. K. Venayagamoorthy, et al., "Intelligent methods for smart microgrids," in *2011 IEEE Power and Energy Society General Meeting*, IEEE, 2011, pp. 1–8.

161. G. Swann and S. Kamalasadan, "An intelligent system-centric control approach to power system stabilization using linear adaptive and optimal dhp controller," in *2011 IEEE Power and Energy Society General Meeting*, IEEE, 2011, pp. 1–8.

162. S. Kamalasadan and C. M. Tanton, "Modeling and simulation of pem fuel cell generator as a micro grid," in *2010 IEEE Industry Applications Society Annual Meeting*, IEEE, 2010, pp. 1–8.

163. A. Manickam, G. Swann, S. Kamalasadan, D. Edwards, and S. Simmons, "A novel self-evolving multi-agent architecture for power system monitoring and protection against attacks of malicious intent," in *IEEE PES General Meeting*, IEEE, 2010, pp. 1–8.

164. G. Swann and S. Kamalasadan, "A novel system-centric intelligent adaptive control architecture for damping inter-area mode oscillations in power system," in *2010 IEEE Industry Applications Society Annual Meeting*, IEEE, 2010, pp. 1–7.

165. G. Swann and S. Kamalasadan, "Analysis of inter-area mode oscillations using intelligent system-centric controllers," in *IEEE PES General Meeting*, IEEE, 2010, pp. 1–7.

166. S. Kamalasadan and G. Swann, "A novel power system stabilizer based on fuzzy model reference adaptive controller," in *2009 IEEE Power & Energy Society General Meeting*, IEEE, 2009, pp. 1–8.

167. S. Kamalasadan and G. D. Swann, "An intelligent hybrid controller for speed control and stabilization of synchronous generator," in *2009 International Joint Conference on Neural Networks*, IEEE, 2009, pp. 1481–1488.

168. S. Kamalasadan, G. D. Swann, and A. A. Ghandakly, "An intelligent paradigm for electric generator control based on supervisory loops," in *2009 International Joint Conference on Neural Networks*, IEEE, 2009, pp. 1489–1496.

169. G. Swann and S. Kamalasadan, "A novel radial basis function neural network based intelligent adaptive architecture for power system stabilizer," in *41st North American Power Symposium*, IEEE, 2009, pp. 1–7.

170. A. Hande and S. Kamalasadan, "System modeling and design considerations for point-of-load digital power supplies," in *2008 34th Annual Conference of IEEE Industrial Electronics*, IEEE, 2008, pp. 1004–1009.

171. S. Kamalasadan, "A new high performance intelligent speed controller for induction motor based on supervisory loops," in *2008 IEEE Power and Energy Society General Meeting-Conversion and Delivery of Electrical Energy in the 21st Century*, IEEE, 2008, pp. 1–7.

172. S. Kamalasadan, "An intelligent coordinated design for excitation and speed control of synchronous generators based on supervisory loops," in *2008 IEEE Power and Energy Society General Meeting-Conversion and Delivery of Electrical Energy in the 21st Century*, IEEE, 2008, pp. 1–8.

173. G. D. Swann and S. Kamalasadan, "An approach for temperature and frequency control of a crystal oscillator," in *2008 34th Annual Conference of IEEE Industrial Electronics*, IEEE, 2008, pp. 2976–2981.

174. S. Kamalasadan, "A composite parallel intelligent controller for multimodal and uncertain systems: Design and development," in *The IASTED International Conference on Modern Nonlinear Theory: Bifurcation and Chaos*, 2007, pp. 1–6.

175. S. Kamalasadan, "A new intelligent controller for the precision tracking of permanent magnet stepper motor," in *2007 IEEE Power Engineering Society General Meeting*, IEEE, 2007, pp. 1–7.

176. S. Kamalasadan, "An organizational coordinated control paradigm for complex systems based on intelligent agent supervisory loops," in *2007 International Joint Conference on Neural Networks*, IEEE, 2007, pp. 3029–3034.

177. S. Kamalasadan, "Stable intelligent adaptive controller design for pitch-rate command control," in *2007 International Joint Conference on Neural Networks*, IEEE, 2007, pp. 2318–2323.

178. K. S. Al-Olimat, A. A. Ghandakly, and S. Kamalasadan, "Induction motor speed control via fuzzy logic modification of reference model," in *2007 IEEE Power Engineering Society General Meeting*, IEEE, 2007, pp. 1–7.

179. A. Hande, S. Kamalasadan, and A. Srivastava, "A selective voltage measurement system for series connected battery packs," in *Proceedings of the IEEE SoutheastCon 2006*, IEEE, 2006, pp. 22–27.

180. S. Kamalasadan, A. Srivastava, and D. Thukaram, "Novel algorithm for online voltage stability assessment based on feed forward neural network," in *2006 IEEE Power Engineering Society General Meeting*, IEEE, 2006, 7–pp.

181. S. Kamalasadan and A. K. Srivastava, "A novel multiagent supervisory loop based control algorithm for fighter aircraft pitch rate tracking.," in *CATA*, 2006, pp. 122–127.

182. D. S. Lamb and S. Kamalasadan, "A new design for audio clipping pre-amplifiers based on silicon control rectifiers," in *Proceedings of The 2006 IJME - INTERTECH Conference*, 2006.

183. A. K. Srivastava, S. Kamalasadan, and A. Hande, "Comparative performance of improved shrinking span fuzzy logic controller," in *Proceedings of the IEEE SoutheastCon 2006*, IEEE, 2006, pp. 16–21.

184. S. Kamalasadan, "A novel intelligent agent supervisory loop based control algorithm for dynamic systems.," in *IICAI*, 2005, pp. 178–197.

185. S. Kamalasadan and A. A. Ghandakly, "A fighter aircraft pitch rate control based on neural network parallel controller," in *CIMSA. 2005 IEEE International Conference on Computational Intelligence for Measurement Systems and Applications, 2005.*, IEEE, 2005, pp. 135–140.

186. S. Kamalasadan and A. A. Ghandakly, "A neural network parallel adaptive controller algorithm for fighter aircraft pitch rate control.," in *IASSE*, 2005, pp. 123–128.

187. S. Kamalasadan and A. A. Ghandakly, "Multiple fuzzy reference model adaptive controller algorithm for aircraft pitch-rate tracking.," in *IASSE*, 2005, pp. 117–122.

188. S. Kamalasadan and A. A. Ghandakly, "Nonlinear fighter aircraft pitch-rate tracking using a multiple fuzzy reference model adaptive controller," in *CIMSA. 2005 IEEE International Conference on Computational Intelligence for Measurement Systems and Applications, 2005.*, IEEE, 2005, pp. 44–49.

189. S. Kamalasadan and A. A. Ghandakly, "A neural network based intelligent model reference adaptive controller," in *2004 IEEE International Conference onComputational Intelligence for Measurement Systems and Applications, 2004. CIMSA.*, IEEE, 2004, pp. 174–179.

190. S. Kamalasadan, A. A. Ghandakly, and K. Al-Olimat, "A fuzzy multiple reference model adaptive control scheme for flexible link robotic manipulator," in *2004 IEEE International Conference onComputational Intelligence for Measurement Systems and Applications, 2004. CIMSA.*, IEEE, 2004, pp. 162–167.

191. S. Kamalasadan and A. Hande, "A pid controller for real-time dc motor speed control using the c505c microcontroller.," in *CAINE*, 2004, pp. 34–39.

192. S. Kamalasadan, A. A. Ghandakly, and K. S. Al-Olimat, "A fuzzy logic based multiple reference model adaptive control.," in *CAINE*, 2003, pp. 58–61.

Granted Patents and Patent Publications

Final

1. Grid ancillary service with uninterruptible power supply, Sukumar Kamalasadan, Robin Bisht, Sherif Abdelrazek, U.S. Patent number: 12463458, Type: Grant, Date of Patent: November 4, 2025.

2. Grid ancillary service with uninterruptible power supply, Sukumar Kamalasadan, Robin Bisht, Sherif Abdelrazek, Publication number: 20240297526, Type: Application, Publication Date: September 5, 2024.

3. Grid ancillary service with uninterruptible power supply, Sukumar Kamalasadan, Robin Bisht, Sherif Abdelrazek, U.S. Patent number: 11984759, Type: Grant, Date of Patent: May 14, 2024.

4. Grid ancillary service with uninterruptible power supply, Sukumar Kamalasadan, Robin Bisht, Sherif Abdelrazek, Publication number: 20220216726, Type: Application, Publication date: July 7, 2022.

5. Battery energy storage system controller systems and methods, S. Kamalasadan, S. A. Abdelrazek, J. H. R. Enslin, D. B. Sowder, U.S. Patent number 10554048, Type: Grant, Date of Patent: February 4, 2020.
6. Grid tied system controller including logic coupled to a photovoltaic station and an energy storage system, S. A. Abdelrazek, J. H. R. Enslin, D. B. Sowder, U.S. Patent number 9843189, Type: Grant, Date of Patent: December 12, 2017.
7. Battery Energy Storage System Controller Systems and Methods, Sukumar KAMALASADAN, Sherif Abdelmageed ABDELRAZEK, Johan H.R. ENSLIN, Daniel Blair SOWDER, Publication number: 20170085091, Type: Application, Publication date: March 23, 2017.
8. Grid Tied Battery Energy Storage System Controller Systems and Methods, Sukumar KAMALASADAN, Sherif Abdelmageed ABDELRAZEK, Johan H.R. ENSLIN, Daniel Blair SOWDER, Publication number: 20150333523, Type: Application, Publication date: November 19, 2015.

Provisional

5. A. Ravindran, S. Kamalasadan, "Hierarchical Cross-Stack Dynamic Stochastic Optimal Control Framework for Energy-Aware Computing," U.S. Provisional Patent Application No. 61/735,169, Filed December 10, 2012.

Technical Reports (Selected)

1. S. Kamalasadan, "Optimization and Control", NSF AIS Award Annual Report, May 2017, Report No. 013991#4.
2. S. Kamalasadan, "Optimization and Control", NSF AIS Award Annual Report, May 2017, Report No. 013991#3.
3. S. Kamalasadan, "Optimization and Control", NSF AIS Award Annual Report, May 2017, Report No. 013991#2.
4. S. Kamalasadan, "Optimization and Control", NSF AIS Award Annual Report, May 2017, Report No. 013991#1.
5. S. Kamalasadan, "A new generation of a scalable intelligent supervisory loop-based algorithm for complex system control and optimization," NSF CAREER Award Annual Report, October 2012, Award No. 0748238#5.
6. S. Kamalasadan, NSF CAREER Award Annual Report, October 2011, Award No. 0748238#4.
7. S. Kamalasadan, NSF CAREER Award Annual Report, October 2010, Award No. 0748238#3.
8. S. Kamalasadan, NSF CAREER Award Annual Report, October 2009, Award No. 0748238#2.
9. S. Kamalasadan, NSF CAREER Award Annual Report, October 2008, Award No. 0748238#1.
10. S. Kamalasadan, "Prospectus in Renewable Energy Based Distributed Generation and Grid Interface," UWF Internal Report, October 2007.
11. S. Kamalasadan, "Micro-grid Power Module Using Hybrid Renewable Energy Fuels," Internal Project Proposal Report, December 2006.
12. J. Ames, S. Kamalasadan, "A tutorial on operational amplifier basics, circuit design, and simulations using Multisim," Project Report, December 2005.

13. S. Kamalasadan, "Intelligent adaptive controllers based on supervisory loop algorithms," Summer Research Grant Report, September 2005.
14. S. Kamalasadan, "Self-tuning regulator techniques for position control of permanent magnet stepper motor," Research Project Report, December 2003.
15. S. Kamalasadan, "Intelligent adaptive control technique using fuzzy systems," Technical Paper, December 2003.
16. S. Kamalasadan, "Real-time speed control of a DC motor using C505C microcontroller," Research Project Report, May 2001.
17. S. Kamalasadan, "Artificial intelligence techniques in power systems applications," Research Study Report, March 1999.

Other Publications

1. S. Kamalasadan, Y. Beaz, J. H. Enslin, *Duke Energy Smart Grid Laboratory Yearly Report*, August 2014.
2. S. Kamalasadan, J. H. Enslin, *Duke Energy Smart Grid Laboratory Yearly Report*, August 2013.
3. S. Kamalasadan, J. H. Enslin, *Duke Energy Smart Grid Laboratory Yearly Report*, August 2012.
4. S. Kamalasadan, M. Dreadin, "An end-to-end smart grid demonstration with hybrid energy storage and consumer-driven energy usage options," DOE Project Proposal, August 2009.
5. S. Kamalasadan, "Micro-grid Power Module Using Hybrid Renewable Energy Fuels," Florida Renewable Energy Technologies Grant Proposal, October 2007.
6. S. Kamalasadan, "A new generation of a scalable intelligent supervisory loop-based algorithm for complex system control and optimization," NSF Proposal, July 2007.
7. S. Kamalasadan, "An Integrated Model for Applied Engineering Communication and Control Curriculum Improvement (AIM-C3I)," NSF Proposal, May 2006.
8. S. Kamalasadan, "Scalable Intelligent Supervisory Loop-based Learning and Adaptation Algorithms for Control of Complex Systems," NSF Proposal, October 2006.
9. S. Kamalasadan, "A New Generation of Intelligent Agent Supervisory Loop-based Adaptive Controllers," NSF Proposal, July 2005.
10. S. Kamalasadan, "A New Generation of Adaptive Control: An Intelligent Supervisory Loop Approach," Ph.D. Dissertation, ProQuest, Publication No. AAT 3141223, August 2004.
11. S. Kamalasadan, "A Neural Network Approach to Voltage Stability Assessment and Improvement," M.S. Thesis, Asian Institute of Technology, Bangkok, Thailand, August 1999.

Other Selected Professional Presentations and Posters

1. S. A. Abdelrazek, S. Kamalasadan, T. Fenimore, "Battery Energy Storage Controller for High Penetration of Photovoltaic Power," DistribuTECH, 2017.
2. S. A. Abdelrazek, S. Kamalasadan, J. Enslin, TechConnect World Innovation Conference, June 2015.
3. S. A. Abdelrazek, S. Kamalasadan, J. Enslin, Energy Storage Association Conference, May 2015.
4. S. Kamalasadan, "Modern Power Systems Control—Novel Intelligent Adaptive Concepts," Florida State University, March 2007.

5. S. Kamalasadan, "Novel Intelligent Approaches to Modern Power Systems Control and Analysis," CAPS, Florida State University, March 2007.
6. S. Kamalasadan, "Multi-Agent Control Systems—An Intelligent Supervisory Loop Approach," UCF, June 2006.
7. S. Kamalasadan, 2nd IICAI Conference, Pune, India, December 2005.
8. S. Kamalasadan, 17th International Conference on Computer Applications in Industry and Engineering, November 2004.
9. S. Kamalasadan, University of West Florida, April 2004.
10. S. Kamalasadan, 16th International Conference on Computer Applications in Industry and Engineering, November 2003.
11. S. Kamalasadan, Sigma Xi Research Symposium, University of Toledo, 2003.

Other Seminars and Invited Talks (Selected)

1. S. Kamalasadan, Panelist, Southeast Grid Modernization Summit, Charlotte Business Journal, 2016. Link
2. Workshop on Big Data Analytics in Cyber-Physical Systems, CPS Week, April 2015.
3. S. Kamalasadan, Keynote Speaker, International Power System Conference, Chennai, India, February 2014.
4. S. Kamalasadan, EPIC Seminar Series, April 2014.
5. S. Kamalasadan, NC Smart Grid Forum, April 2012. Link
6. S. Kamalasadan, University of South Florida, February 2009.
7. S. Kamalasadan, Florida State University, March 2007.
8. S. Kamalasadan, CAPS, Florida State University, March 2007.
9. S. Kamalasadan, UCF Institute of Simulation and Training, June 2006.
10. S. Kamalasadan, ACM General Meeting, University of West Florida, January 2006.
11. S. Kamalasadan, University of West Florida, April 2004.

Teaching and Advising / Mentoring / Collaborations

Statement of Teaching Interest and Philosophy

Teaching and research are the quintessence of academic life. Integrating research outcomes into the curriculum enables the dissemination of new knowledge, emerging technologies, and best practices to students through teaching. Effective teaching extends beyond textbook delivery; it requires continuous dialogue that encourages students to develop independent thinking and problem-solving skills. These principles, shaped by years of teaching experience, have guided my pedagogical approach and brought deep professional satisfaction.

Teaching Experience

University of North Carolina at Charlotte (UNCC): Fall 2010–Present
University of West Florida (UWF): Fall 2004–Summer 2010

Selected Educational Activities

Course Restructuring and Development

Total number of courses taught or developed: 62

- **Smart Grid Characteristics and Design (UNCC):** Designed and developed a new course focused on power grid modernization.
- **Power System Stability (UNCC):** Designed and developed a new graduate-level course addressing modern stability challenges.
- **Power Generation Operation and Control; Electromagnetic Devices (UNCC):** Substantially revised existing courses to include inverter-based resource (IBR) integration.
- **Control Systems (UWF, Fall 2006):** Introduced and developed a new course covering digital and analog control with laboratory components and a capstone project.
- **Electric Power Systems (UWF, Fall 2004):** Revised course objectives, syllabus, and content to incorporate modern power system technologies and simulation-based laboratories.

Other Teaching-Related Activities

- Led curriculum revisions and introduced new courses aligned with evolving industry and research needs.
- Developed and delivered four professional short courses for Gulf Power engineers as a four-day workshop series (Motor Control, Lightning Theory, Voltage Regulation).

Professional Development in Teaching

- Faculty Workshop on *Reforming Electric Energy Systems Curriculum with an Emphasis on Sustainability*, Washington, DC, April 9–10, 2015.
- Faculty Mentoring Program, Office of Advanced Faculty Affairs, UNC Charlotte, 2014.

Graduate Student Supervision

Highlights

- **Ph.D. Graduates: 36 M.S. Thesis: 16 M.S. Project: 15**
- **Strong industry placement** across utilities, ISO/RTOs, national labs, and power technology companies.
- **Multiple graduates at Duke Energy**; several alumni now in leadership or academic roles.

Graduate Students under Direct Supervision (M.S. and Ph.D.)

Total Graduate Students Supervised: 67

Graduate Students (Ph.D. Dissertation Level)

Current Ph.D. Students

1. **Md Hasnain Arifin**, "Power System Stability Models with Inverter-Based Resources," Ph.D., Expected Graduation: Fall 2026.
2. **Nasser Althaiban**, "Power Distribution System Management with Regulators," Ph.D., Expected Graduation: Fall 2026.
3. **Sadique Khan**, "Modeling and Control of Hybrid Energy Resources," Ph.D., Expected Graduation: Spring 2029.
4. **Asif Chowdhury**, "Development of Online Risk Assessment Models of Electric Grids with Inverter-Based Resources," Ph.D., Expected Graduation: Spring 2029.
5. **Ahmed Tawfik**, "Modeling and Control of Inverter-Based Resources in Electric Grids," Ph.D., Expected Graduation: Spring 2029.
6. **A. Abd-Elkader**, "Transient Stability Assessment Using Synchrophasors," Ph.D., Expected Graduation: Fall 2026.
7. **Nayeemur Rahman**, "Power System Stability," Ph.D., Expected Graduation: Spring 2027.
8. **Alessandro De Sousa Berredo**, "Power System Resiliency," Ph.D., Expected Graduation: Spring 2027.

Ph.D. Students Completed

1. **Roopa Ramachandran**, "Distribution System State Estimation," Ph.D., Fall 2025. *Employment: Alabama Power.*
2. **Md Shamim Hasan**, "Distribution System Optimization," Ph.D., Spring 2025. *Employment: Oak Ridge National Laboratory.*
3. **Sarmad Tariq**, "Optimal Management of Power Grids with D-FACTS," Ph.D., Spring 2024.
4. **Olalekan Ogundairo**, "Management of Renewable Energy Integrated Power Grids for Frequency Regulation," Ph.D., Fall 2023. *Employment: Startup Founder.*
5. **Fahim Al-Hasnain**, "Wide-Area Control and Stability," Ph.D., Summer 2023. *Employment: New England ISO.*
6. **Tarik Chowdhury**, "Power System Optimization and Optimal Power Flow," Ph.D., Spring 2023. *Employment: Dominion Energy.*
7. **Aravind Ingallali**, "Microgrid Control and Management," Ph.D., Spring 2023. *Employment: Eaton Research Labs.*
8. **Raheem Ariwoola**, "Residential Building Modeling and Control," Ph.D., Spring 2023. *Employment: NC State University.*
9. **Bilkis Banu**, "Power Distribution System Protection with Renewables," Ph.D., Fall 2022. *Employment: Duke Energy.*
10. **Ali Aygun**, "Demand Response and Electric Vehicle Management," Ph.D., Fall 2022.
11. **Biswajit Dipan Biswas**, "Optimization and Control of Large-Scale Inverter-Based Distribution Systems," Ph.D., Fall 2022. *Employment: Intel.*

12. **Shyamal Patel**, "Management of Power Distribution Systems with High Renewable Penetration," Ph.D., Spring 2022. *Employment: Hitachi Energy.*
13. **Arun Suresh**, "Frequency Regulation and Control of DER-Integrated T&D Systems," Ph.D., Fall 2021. *Employment: Hitachi Energy.*
14. **Anuprabha Ravindran Nair**, "Stability and Control of Storage-Integrated Wind Energy Systems," Ph.D., Fall 2021. *Employment: Hitachi Energy.*
15. **R. Bisht**, "Control and Stability of Unbalanced Distribution Systems," Ph.D., Spring 2021. *Employment: Duke Energy.*
16. **A. Joshi**, "DC–AC Microgrid Control and Optimization," Ph.D., Spring 2021. *Employment: ABB.*
17. **W. Davis**, "PMU-Based Situational Awareness in Modern Power Grids," Ph.D., Fall 2020. *Employment: Duke Energy.*
18. **J. Hossain**, "Frequency-Dependent Real-Time Transient Stability Algorithms," Ph.D., Fall 2019. *Employment: Duke Energy.*
19. **A. Sahami**, "Energy Function-Based Stability Analysis," Ph.D., Fall 2019. *Employment: Dominion Energy.*
20. **A. Thakallapelli**, "Stability Analysis of Wind Farms Using Oscillation Paths," Ph.D., Fall 2018. *Employment: Power-Grid Solutions.*
21. **M. Ahmed**, "Energy Storage Optimization for Multi-Function Applications," Ph.D., Fall 2018. *Employment: Energy Exemplar.*
22. **R. Bhattarai**, "Real-Time Control of Wind Generation," Ph.D., Spring 2018. *Employment: Idaho National Laboratory.*
23. **N. Gurung**, "Adaptive Control for Wind Farm Stability," Ph.D., Spring 2018. *Employment: ComEd.*
24. **R. Yousefian**, "Stochastic Adaptive Control for Wide-Area Power Systems," Ph.D., Fall 2016. *Employment: S&C Electric.*
25. **M. Moghadasi**, "Large-Scale Optimization for Distributed Generation," Ph.D., Fall 2016. *Employment: Open Systems International.*
26. **R. Maharjan**, "Voltage Stability of Grid-Integrated Wind Systems," Ph.D., Fall 2016.
27. **S. Abdelrazek**, "Battery Energy Storage Control Architectures," Ph.D., Fall 2015. *Employment: Duke Energy.*
28. **M. Smith**, "Predictive and Adaptive Control of Nonlinear Systems," Ph.D., Fall 2015. *Employment: UNC Charlotte.*

Graduate Students (M.S. Thesis Level)

1. **S. Subramaniam**, "Unbalanced Power Distribution System Management Using Single-Phase Inverters," M.S. Thesis, Summer 2018. *Employment: Schweitzer Engineering Laboratories (SEL).*
2. **Lee Luis**, "Scenario Generation and Reduction for PV-Integrated Unit Commitment," M.S. Thesis, Spring 2018. *Employment: Schweitzer Engineering Laboratories (SEL).*
3. **M. S. Sheikh**, "PMU-Based Adaptive Out-of-Step Protection and Control Using Transient Stability Methods," M.S. Thesis, Fall 2017. *Employment: Schweitzer Engineering Laboratories (SEL).*

4. **T. Paul**, "Power Grid Optimization and Control in the Presence of Photovoltaic Systems," M.S. Thesis, Spring 2016. *Employment: Schweitzer Engineering Laboratories (SEL).*
5. **R. Bisht**, "Harmonic Analysis and Active Filtering of PV-Integrated Power Systems," M.S. Thesis, Summer 2016. *Subsequently pursued Ph.D. studies.*
6. **A. Joshi**, "Advanced Control Architectures for PV-Integrated Power Grids," M.S. Thesis, Summer 2016. *Subsequently pursued Ph.D. studies.*
7. **A. Patel**, "Locational Marginal Pricing-Based Optimal Power Flow with Energy Storage," M.S. Thesis, Fall 2016. *Subsequently pursued Ph.D. studies.*
8. **T. Orjuela**, "Optimization and Control of Wind Energy for Increased Penetration in Smart Grids," M.S. Thesis, Fall 2014. *Employment: Entrepreneur.*
9. **G. Deshpande**, "Hybrid Architectures for Combined Voltage, Reactive Power, and Real Power Support in Microgrids," M.S. Thesis, Fall 2013. *Employment: TDK.*
10. **N. Kulkarni**, "Identification and Control of Wiener-Type Nonlinear Systems," M.S. Thesis, Fall 2014. *Employment: Rolls-Royce.*
11. **K. Desai**, "Modeling and Control of Microturbine-Based Parallel Plug-In Hybrid Electric Vehicles," M.S. Thesis, Fall 2011. *Employment: Schweitzer Engineering Laboratories (SEL).*
12. **A. Manickam**, "Intelligent and Secure Algorithms for Control and Protection of Modern Complex Systems," M.S. Thesis, Summer 2011. *Employment: RightScale.*
13. **Gerald Swann**, "System-Centric Control Approaches Using Neural Networks for Power System Stabilization," M.S. Thesis, Fall 2010. *Employment: General Dynamics.*
14. **Nicholas Johnson**, "Global Maximum Power Point Tracking for Regional Photovoltaic Systems," Directed Research (M.S. Thesis Option), Summer 2009. *Employment: U.S. Navy.*
15. **Sam McGilvery**, "Intelligent Adaptive Controller Design Using Genetic Algorithms," M.S. Thesis, Summer 2005. *Employment: Element Machinery.*
16. **R. Buyyanapragada**, "Structure-Preserving Energy Function-Based Analysis of Power Grids," M.S. Thesis, Spring 2015. *Employment: Ecojiva.*

- Representative topics include distribution system optimization, inverter-based control, PMU-based protection, microgrids, and renewable integration.
- Majority of graduates placed at **SEL, Duke Energy, Rolls-Royce, TDK, and national laboratories**.

Graduate Students (M.S. Project Level)

1. **Cory Brown**, "Experimental Setup of a Microgrid for Fault Analysis," M.S. Project, Spring 2022.
2. **R. Cashion**, "Power Quality Analysis with Renewable Energy Integration," M.S. Project, Fall 2018.
3. **N. Sintala**, "Evaluation and Analysis of Power Distribution Systems with Renewable Resources," M.S. Project, Fall 2018.
4. **Aniruddha Narkhede**, "Modeling of Power Distribution Systems with Integrated Energy Storage," M.S. Project, Spring 2018. *Employment: PECO Energy.*

5. **A. Potdar**, "Reverse Mapping of Transmission Line Impedance Using Fault Data," M.S. Project, Spring 2017. *Employment: Schneider Electric.*
6. **Max Hartenstein**, "Autonomous Quadcopter-Based Security Alarm System," M.S. Project, Fall 2015. *Employment: Entrepreneur.*
7. **M. Bharadwaz**, "Energy Storage Modeling in Real-Time Digital Simulation (RTDS)," M.S. Project, Spring 2014. *Employment: Entrepreneur.*
8. **J. Liles**, "Self-Healing Network Modeling and Control," M.S. Project, Spring 2013. *Employment: Florida Power & Light.*
9. **H. Norman**, "Power System Restoration for Duke Energy Distribution Systems," M.S. Project, Spring 2013. *Employment: Duke Energy.*
10. **R. Wertz**, "Protection Systems for Renewable Energy Resources," M.S. Project, Fall 2013. *Employment: Duke Energy.*
11. **A. Kling**, "Power System Communication for the Marshall Power Station," M.S. Project, Fall 2013. *Employment: Duke Energy.*
12. **A. Gebrecherkos**, "Synchrophasor Measurements in Modern Power Grids," M.S. Project, Fall 2013. *Employment: American Electric Power.*
13. **Hannibal Ghebregzabiher**, "Effects of Renewable Energy (Solar and Wind) Integration on Power Grids," M.S. Project, Spring 2023.
14. **James Anderson**, "Microgrid Power System Setup and Implementation," M.S. Project, Spring 2025.
15. **Lavela Gleh**, "Microgrid Modeling and Control," M.S. Project, Fall 2024.

Post-Doctoral Advisees (Direct)

1. **K. Murari**, "Power Grid Modeling and Control," Postdoctoral Researcher, 2019–Present.
2. **S. Ghosh**, "Wind Farm Integration into Power Grids," Postdoctoral Researcher, 2014–2016.
3. **Y. Baez**, "Real-Time Energy Resource Modeling, Development, and Design," Postdoctoral Researcher, 2014–2016.

Committee Memberships (Selected)

1. **T. Pan**, "Power Electronics Converters," Ph.D. Candidate. *Major Advisor: Dr. Manjrekar.*
2. **R. Sarup**, "Demonstration of OpenFBM-Enabled Power System Operations Using Hardware-in-the-Loop (HIL) Real-Time Simulation," M.S. Thesis. *Major Advisor: Dr. Manjrekar.*
3. **C. Gole**, "Analysis of Grid-Connected Inverters," M.S. Thesis. *Major Advisor: Dr. Manjrekar.*
4. **S. Mutha**, "Analysis of Negative-Sequence Directional Elements for Type-IV Wind Power Plants under Various Control Methodologies," M.S. Thesis. *Major Advisor: Dr. Cecchi.*
5. **B. Banu**, "Power Flow Management of Power Distribution Systems with Renewable Integration," M.S. Candidate. *Major Advisor: Dr. Cecchi.*
6. **J. Wright**, "Control of Radial Electrodynamic Wheel Vehicles and Analysis of Axial Electrodynamic Wheels," Ph.D. Candidate. *Major Advisor: Dr. Jonathan Bird.*

7. **M. Davoudi**, "Increasing Hosting Capacity of Distribution Systems with High Distributed Generation Penetration Using Network Reconfiguration," Ph.D. Candidate. *Major Advisor: Dr. V. Cecchi.*
8. **B. Poudel**, "Frequency-Dependent Power Line Modeling," Ph.D. Candidate. *Major Advisor: Dr. V. Cecchi.*
9. **S. Paul**, "Three-Dimensional Steady-State and Transient Eddy Current Modeling," Ph.D., Spring 2014. *Major Advisor: Dr. J. Bird.*
10. **K. K. Uppalapati**, "Investigation of Torque Density Capabilities of Flux-Focusing Magnetic Gearboxes," Ph.D., Fall 2015. *Major Advisor: Dr. J. Bird.*
11. **M. Vedanadam**, "Design of an Axial Flux Focusing Magnetic Gear," M.S. Thesis, Fall 2013. *Major Advisor: Dr. J. Bird.*
12. **P. Padmanathan**, "Design of a Continuously Variable Magnetic Gear," M.S. Thesis, Fall 2013. *Major Advisor: Dr. J. Bird.*
13. **A. Vaddiraj**, "Investigations on Enhanced Power Flow Controllers," M.S. Thesis, Fall 2014. *Major Advisor: Dr. Manjrekar.*
14. **A. Shrestha**, "Dynamic Remedial Action Schemes Using Online Transient Stability Analysis," M.S. Thesis, Fall 2014. *Major Advisor: Dr. Cecchi.*
15. **V. Sharma**, "Deterministic and Probabilistic Forecasting for Wind and Solar Power Using Advanced Data Analytics and Machine Learning Techniques," Fall 2018. *Major Advisor: Dr. Cali.*
16. **Ashutosh Deepak Phatak**, "Development of a Phasor Measurement Unit for Low-Voltage Power Networks," M.S. Thesis. *Major Advisor: Dr. Noras.*
17. **Brett Mitchell Cockerham**, "Understanding Power System Frequency," M.S. Thesis. *Major Advisor: Dr. Noras.*

Exchange Scholars (Selected)

1. **Jonas Schellhorn**, "Modeling and Stability/Control of Weak Power Grids," April–September 2021.
2. **Joanna Geis-Schroer**, "Modeling and Stability/Control of Weak Power Grids," April–September 2019.
3. **Steven DeJongh**, "Modeling and Optimization of the German Power Grid with Renewable Energy Resources," April–September 2018.
4. **Felix Hack**, "Market Analysis of the German Power Grid with Renewable Energy Integration," April–September 2017.
5. **David Freund**, "Modeling and Hardware-in-the-Loop (HIL) Framework Demonstration," April–September 2017.
6. **Marlene Gebhard**, "Modeling and Real-Time Simulation of Power Grids with Renewable Energy Resources," April–September 2016.
7. **Paul Spies**, "Distribution System Optimization with Renewable Energy Resources," April–September 2016.
8. **M. Westermann**, "Advanced Modeling of PV-Integrated Power Grids Using Real-Time Digital Simulation," Karlsruhe Institute of Technology, April–September 2015.

9. **B. Lang**, "Frequency-Dependent Network Equivalent Modeling of Power Grids Using Real-Time Digital Simulation," Karlsruhe Institute of Technology, April–September 2015.

External Examiner / Evaluator (Selected)

1. **Sumit Kumar Jha**, "Assessment of Demand-Side Management for Power Savings in Standalone Microgrids," BITS Ranchi, India, 2022.
2. **Sanjeev Kumar Bhalla**, "Power Quality Improvement in DFIG-Based Wind Energy Conversion Systems," Ph.D., NIT Hamirpur, India, 2015.
3. **Kiran R. Patil**, "Impact of Distributed Generation on Power System Stability," Visvesvaraya Technological University, Karnataka, India, 2021.
4. **Shubhra Shubhra**, "Control of Grid-Integrated Multiple Solar PV Array–Battery-Based Microgrid Systems," IIT Delhi, India, 2021.
5. **Vineet P. Chandran**, "Standalone and Grid-Interactive PMSG-Based Small Hydro Generation with PV and Battery Integration," IIT Delhi, India, 2021.
6. "Analysis and Enhancement of Stability of Power Systems with Utility-Scale Photovoltaic Power Plants," IISc Bangalore, India, 2021.
7. **Shivam Chaturvedi**, "Robust Control Techniques for Virtual Impedance Shaping in Microgrids," IIT Jodhpur, India, 2021.
8. **S. Madhu Babu**, "Single-Phase Step-Up Multilevel Inverters for Standalone Photovoltaic Applications," NIT Warangal, India, 2021.
9. **Seema Kanval**, "Control of Renewable Energy-Based Grid-Interactive Microgrids with Squirrel-Cage Induction Generators," IIT Delhi, India, 2020.
10. **Priyanka Gangwar**, "Multi-Objective Distribution Network Reconfiguration and Optimal Allocation of Renewable Energy Sources," IIT Kanpur, India, 2020.
11. **Bussa Vinod Kumar**, "Improved High-Gain Converters for Low-Power Applications," IIT BHU, India, 2020.
12. **Kumari Kasturi**, "Smart Integration of Renewable Energy Sources, Energy Storage Systems, and Electric Vehicles in Distribution Systems," ITER Odisha, India, 2019.
13. **Preeti Jain**, "Development of Harmonic Phasor Estimation Algorithms and Applications," IIITDM Jabalpur, India, 2019.
14. **Hadi Lomei**, "Emergency Control for Catastrophic Disturbances in Future Power Grids," University of Wollongong, Australia, 2019.
15. **M. S. Suresh**, "Reactive Power Planning for Voltage Stability Enhancement Using Fuzzy Approaches," VTU, India, 2018.
16. **Vignesh V.**, "Improved Load Modeling and Stability Analysis of Wind-Integrated Power Systems," IIT Kanpur, India, 2016.
17. **Arvind K. Jain**, "Strategic Bidding Models for Electricity Markets," Ph.D., IIT Kanpur, India, 2013.
18. **K. Seethalakshmi**, "Adaptive Load Shedding and Distance Relaying Using Synchrophasor Technology," Ph.D., IIT Kanpur, India, 2011.
19. **P. Tripathy**, "Real-Time Power System Stability Prediction Using Synchrophasor-Based Wide-Area Monitoring," Ph.D., IIT Kanpur, India, 2011.

20. **A. Srinivasan**, "Identification and Control of Wiener-Type Nonlinear Systems," Ph.D., University of Madras, December 2008.
21. **Md. Muminul Chy**, "Wide-Speed-Range PMSM Drive Control Techniques," M.S., Lakehead University, Canada, Summer 2007.

Undergraduate Student Supervision

Undergraduate Research Supervision (Selected)

1. **James Haney**, "Microgrid Power Plant Using Hybrid Renewable Energy Sources," Summer 2009.
2. **Chad Tanton**, "Modeling and Simulation of Solar Photovoltaic Cells," Summer 2009.
3. **Chad Tanton**, "High-Precision Remote Monitoring and Control of Brushless DC Motors," Spring 2009.
4. **Nicholas Feilner**, "Speed Control of Brushless DC Motors," Spring 2009.
5. **Jason Augayo**, "Sensorless Speed Control of Induction Motors," Fall 2008.
6. **Gerald Swann**, "High-Performance Intelligent Controllers for Power System Control," 2008.
7. **Gerald Swann**, "Precision Temperature Control for Crystal Oscillators," Spring–Fall 2007.
8. **Chad Witbracht**, "Design and Development of an Electric Bicycle," Spring 2007.
9. **Chad Currey**, "PEM Fuel Cell Modeling and Simulation," Fall 2006.
10. **Jonathan Ames**, "Design and Development of Operational Amplifier-Based Circuits," Fall 2005.
11. **Daniel Lamb**, "Audio Clipping Pre-Amplifier Using Silicon-Controlled Rectifiers," Summer 2005.

Undergraduate Senior Design Supervision

Total Undergraduate Advisees: 65

- **Fall 2020:** Five senior design students; *Load Profiles of Customer Classes and Feeder Voltage Profiles*. Funded by Duke Energy. **Third Prize**, Senior Design Exposition (Spring 2021).
- **Fall 2019:** Four senior design students; *Load Profiles of Customer Classes and Feeder Voltage Profiles*. Funded by Duke Energy.
- **Spring 2019:** Four senior design students; *Microgrid Control Design and Simulation for UNCC Campus*. Funded by SEL.
- **Fall 2018:** Four senior design students; *Meter and Device Placement for Duke Circuit Model – Phase III*. Funded by Duke Energy.
- **Fall 2017:** Multiple senior design teams on microgrid studies and meter placement projects funded by SEL, Duke Energy, and CAPER.
- **Fall 2016:** Five senior design students; *PV Integrated Distribution Energy Management System with IVVC and Optimal Measurement*. Funded by Duke Energy.
- **Fall 2015–Spring 2016:** Three senior design students; *Duke Integrated Distribution Management System*. **First Prize**, IEEE PES T&D Student Poster Competition.

- **2014–2011:** Multiple senior design teams working on renewable integration, microgrid design, predictive technologies, and grid-connected energy systems. Projects funded by Duke Energy, SEL, EPIC, Shaw, and CAPER, with multiple **First, Second, and Third Prize** awards at university and IEEE venues.

Notes:

- Several undergraduate advisees subsequently joined Duke Energy as full-time employees.
- Undergraduate senior design projects are industry-supported at $3,000 per team through the Industrial Solutions Laboratory at UNC Charlotte. Funding supports student projects and is not direct faculty compensation. Each project spans two academic semesters.

References

REFERENCE UPON REQUEST