

Education:

MBA, Duke University, The Fuqua School of Business, NC, 2004

PhD, University of Miami, Coral Gables, FL, 1994

MSEE, University of Miami, Coral Gables, FL, 1991

BE, Manipal Institute of Tech, Karnataka, India, 1989

National Licenses:

Professional Engineer (P.E.)

NC #26216

CA #16264

NERC Certified System Operator, #N19981282

Professional memberships:

Accreditation Board of Engineering Technology (ABET), Program Evaluator, 2012-Present

University of Miami, College of Engineering, Industry Advisory Board, 2012-2017

NC State University, FREEDM Center, Education Advisory Board, 2010-2014

Duke University, Professional Member, Engineering World Health, 2008-Present

Duke University, Fuqua Alumni Council Member, 2004-2009

Duke University, Alumni Admission Advisory Committee, 2003-2017

IEEE Eastern NC Industrial Applications Society, Chair, 2001-2002

IEEE Senior Member, 1999

NSPE Member, 2000

Tau Beta Pi, Life Member, 1989

Eta Kappa Nu/HKN, Life Member, 1990

Dr Mukherjee comes with 35 years of research, engineering, academic and management experience in Power Systems Operations, Power Generation Engineering, Transmission Planning, Energy Markets, Electrical Grid Resiliency and Distributed Generation of Power Systems. Srijib has an MBA in Finance from Duke University, Ph.D. and MS in Electrical Engineering from the University of Miami and a B.E. (Bachelor of Engineering, Electrical Power Engineering) from The Manipal Institute of Technology. He has a Joint Faculty, Professor appointment with the University of Tennessee's and Oak Ridge National Laboratory's Bredesen Center. Srijib's research and engineering interests are in the technologies surrounding autonomous cars, electric charging infrastructure and energy storage. His experience spans 14 years with US electric utilities (CP&L/Duke Energy, Nevada Power/NV Energy, and FP&L/NextEra Energy), 13 years with various technical and management energy consulting firms (Quanta Technology/Quanta Services, Pike Electric and Mott MacDonald), 10 years as an Adjunct and Research Faculty member at The University of North Carolina, Charlotte and The University of Tennessee, Bredesen Center and 4 years with Government Agencies (NOAA and ORNL). He has published over 30 peer reviewed, refereed research papers in various journals and conferences, 14 DOE Technical Reports at The Office of Science and Technical Information (OSTI) and has 2 patents and 1 invention disclosure under patent application. He is also a veteran Program Evaluator (PEV) for the Accreditation Board of Engineering Technology (ABET) and is an Alternate Board Member of the IEEE Committee on Engineering Accreditation Activities (IEEE CEAA). Additionally, he is licensed to practice engineering as a Professional Engineer (P.E.) in the States of NC, NV and CA and licensed to operate the US Grid as a NERC Certified System Operator. Srijib has mentored advised and chaired 10 Ph.D. and master's student's thesis committees in Energy Science and Power Systems research. He volunteers his time to tutor high school math (Algebra, Geometry and AP Calculus) to low-income students in his school district. He is a parent with two college age children (one in law school and the other a Military Cadet who just graduated and is also in law school). He enjoys gardening, pickle ball, tennis, and non-fiction books.

Oak Ridge National Laboratory (ORNL) Accomplishments:

Dec 2019 – Present:

1. AI/ML based Adaptive Protection PI
2. Technical Assistance with Hydropower Hybrids and Pumped Storage Hydropower PI
3. Black start Protective Relaying, PI
4. Hydro Fleet Intelligence – Use Case 1: PI
5. Inter-lab Near Term Resilience: PI
6. NC-5 Hydro Flexible Operations Roadmap: PI
7. PSH-Techno Economic Studies: PI
8. Digital Twin Hydro Power System Domain Expert
9. NAERM Real Time Situational Awareness
10. BECCS Biomass Carbon Sequestration
11. Five Journal Papers from 2020 -2024
12. Eight Conference Papers from 2020 – 2024
13. Nine DOE OSTI Reports as Lead Author 2020 - 2024
14. Four ABET Program Evaluation for IEEE EAC 2020 - 2024
15. Graduated Two Ph.D. students 2020-2024
16. Thesis Chair for Three Ph.D. students: 2020 -2024
17. Two invention disclosure under Patent Application
18. 1 Patent on Universal Interface Method for Pinouts
19. 1 Invention Disclosure on Signature Fault Patterns

Employment history	
2019 - Present	Sr. R&D Scientist, Oak Ridge National Laboratory
2020 – Present	Joint Faculty Professor, University of Tennessee, Bredesen Ctr.
2012 – 2019	Adjunct Faculty, UNCC, Systems Engineering
2018 – 2019	Distinguished Engineer, Mott MacDonald, Power Delivery
2014 – 2018	Principal Engineer, Pike Electric Corporation, Grid Modernization
2007 – 2014	Director, Quanta Technology, Transmission Planning
1999 – 2007	Lead Engineer, Carolina Power & Light/Duke Energy
1994 – 1999	Operations Engineer, NV Energy/Sierra Pacific Resources
1989 - 1994	Graduate Research Assistant, University of Miami
1991 – 1992	Summer Intern, NOAA Miami, FL
1990 - 1991	Summer Intern, Florida Power & Light Company

Google Scholar Citations:

<https://scholar.google.com/citations?user=PHVZNR0AAAAJ>

Mendeley SCOPUS:

<https://www.mendeley.com/profiles/srijib-mukherjee/?viewAsOther=true>

ORCID publications

<https://orcid.org/my-orcid>

Publons publications

<https://publons.com/researcher/3460996/srijib-mukherjee/>

ORNL Web Page

<https://www.ornl.gov/staff-profile/srijib-k-mukherjee>

SciProfile MDPI Web Page

<https://sciprofiles.com/profile/Srijib>

Relevant Grants (2021 – 2024):

- Awarded DOE Office of Energy Efficiency and Renewable Energy, Water Power Technology Office, National Laboratory Call for Technical Assistance with Hydropower Hybrids and Pumped Storage Hydropower, with NREL, Principal Investigator, 240K (120K, 2025 and 120K, 2026)
- Awarded DOE Office of Energy Efficiency and Renewable Energy, Water Power Technology Office, Spatio Temporal Energy Infrastructure Datasets, Co Principal Investigator with Dr. D.Singh, \$290K, 2024
- Awarded DOE Office of Fossil Energy, Nuclear Energy and Energy Efficiency and Renewable Energy – Inter-lab, Near Term Reliability and Resilience, Lead Principal Investigator, \$7M, 2023
- Awarded DOE Water Power Technology Office – Inter-lab, NC-5 Flexible Operations, Lead Principal Investigator, \$600K, 2022
- Awarded DOE Water Power Technology Office – Hydro Fleet Intelligence, Use Case 1: Dispatch Variability, Principal Investigator, \$500K, 2021
- Awarded DOE Water Power Technology Office – Pumped Storage Hydro Techno Economic Studies and Tool, ORNL Co – PI, \$100K, 2022

Patent (Co-Inventor):

Patent Application: 63127743. The invention was under a contract with an agency of the United States Government. The name of the US Government agency and Government contract number is: DE-AC05-00OR22725

Invention Disclosure ID: 202205037, "A Detector and Visualizer of Sinusoidal Signal Distortion using Circular Trajectory Approach (CTA)" Invention Disclosure ID#: 202205037, Issued Feb 24, 2022

National Licenses:

1. Professional Engineer (P.E., Electrical) licensed in North Carolina
2. Professional Engineer (P.E. Electrical) licensed in California

3. Fundamentals Engineer (F.E. Electrical) licensed in Nevada
4. NERC Certified System Operator Licensed, North American Electric Reliability Corporation

Chair, Advisor, Mentor: Thesis committees (past 25 years)

1. Chair: Arjun Bhattacharya, UTK/ORI, Ph.D. Thesis, May 2023 - Present
2. Advisor: Haoyuan Sun, University of Tennessee, Electric Engineering, Masters Thesis Committee, May 2023
3. Mentor: Crist R. Reid, Senior Thesis, Arizona State University, Fulton School of Engineering, May 2021
4. Mentor: Max Ferrari, ORNL, Power Division, University of Tennessee, Student, Ph.D., Thesis Com., May 2023
5. Chair: Adeniyi (Abi) Abeniyi, UTK/ORI Reactor and Nuclear Division, Ph.D., Thesis Committee, May 2023
6. Chair: Asha Shibu, , Power Division, UTK/ORI, Ph.D., Thesis Committee, May 2022
7. Mentor: Sambidh Timilisia, Master of Management Science, Duke University mentor, May 2020
8. Mentor: Matt Gosnell, Engineer, NC State University, Master's Thesis committee, May 2021
9. Mentor: Willis Edmondson, NC State University, FREEDM Center, Master's mentor, May 2015
10. Chair: John Allemeier, Energy Science, 2020 UTK Bredesen Center Ph.D., Thesis Com, May 2023
11. Advisor: Duncan Clark, Systems Engineering/MBA mentor, UNCC, 2015
12. Chair: Will Pike, Senior Thesis, University of Virginia, 2017
13. Chair: Douglas Harshbarger, MS Thesis, Electrical Engineering, UNLV, May 1996

Accreditation Board of Engineering Technology ABET Program Evaluator History :

- Program Evaluator 2024 University of Prince Mugrin 11/21/2024
- Program Evaluator 2023 Universidad de los Andes 10/22/23
- Program Evaluator 2022 Rockhurst University 09/19/22
- Program Evaluator 2019 Washington University 09/23/18
- Program Evaluator 2018 University of Ha'il 11/26/17
- Program Evaluator 2016 Florida Institute of Technology 11/01/15
- Program Evaluator 2015 Wentworth Institute of Technology 11/16/14
- Program Evaluator 2014 University of South Florida 09/29/13

Awards and Nominations:

- Nominated to National Society of Professional Engineers (NSPE), Education Committee, 2024-25
- Nominated to IEEE Fellow by Oak Ridge National Laboratory: Feb 2024
- Nominated to NSPE Fellow by Oak Ridge National Laboratory: Mar 2024
- IEEE PES Human Activities Committee (HAC) Subcommittee: Professional and Industry Chair, 2023
- National Society of Professional Engineers (NSPE)/PENC "Engineer of the Year" Award, 2023
- IEEE Rural Electric Power Conference, Committee, 2022-Present
- The Citadel, The Military College of SC, Deans Advisory Council, 2023-Present
- Editorial Board Member, IEEE Power and Energy Magazine, 2023-24
- National Society of Professional Engineer (NSPE), State Delegate Board Member, 2022-24
- Outstanding Faculty Mentor Award, University of Tennessee, May 2022
- Editorial Board, MDPI Energies Journal, 2019 – Pr.
- Alternate Board Member IEEE Committee on Engineering Accreditation Activities, 2018 – Pr.
- Duke University, Fuqua Alumni Council, 2005 - 2010
- NC State University, FREEDM, Education Advisory Board, 2011 -12
- University of Miami, College of Engineering (Electrical Engr.), Advisory Board 2012 - 2018
- Manipal University, Distinguished Alumnus Award, 2014
- Quanta Technology, Service Award for Exceptional Dedication, 2011
- IEEE, Power Engineering Society Outstanding Engineer, 2001
- IEEE, PICA System Restoration contest winner, 1999
- IEEE, Senior Member, nominated in 2001

- NSPE, Member, 2000
- Inducted into Tau Beta Pi Engineering Honor Society (Florida Beta), 1989
- Inducted into Eta Kappa Nu Electrical Engineering Honor Society, 1990
- Undergraduate: First Class with Distinction, Class Rank: 3rd, Electrical Engr. Manipal Institute of Technology, 1989
- Duke of Edinburgh Award Scheme (DEAS) Gold Award, St. Paul's School, Darjeeling, 1983
- Intercollegiate swim team Captain, 1987
- Varsity Track Team Captain, 1983

Relevant Publications:

[1] A. Shibu, **S. Mukherjee**, “*Managing negative values in reservoir inflow computation: A case study*” CRC Press, DOI: <https://doi.org/10.1201/9781003323037>

[2] **S. Mukherjee**, S. Chinthavali, N. Bhusal, S. Subedi, A. Bhattacharya, V. Tansakul “*The Challenges of Modeling Distributed Energy Resources (DERs) as Blackstart Resources and for Volt-VAR Optimality*,” *IEEE Rural Electric Power Conference*, July 2024, DOI: <https://doi.org/10.1109/REPC57617.2024.00021>

[3] H. Shuai, F. Li, J. Zhu, W. Tinggen II, and **S. Mukherjee**, “*Modeling the impact of extreme summer drought on conventional and renewable generation capacity: methods and a case study on the Eastern U.S. power system*,” *Applied Energy*, vol. 363, article# 122977, June 2024, DOI: [10.1016/j.apenergy.2024.122977](https://doi.org/10.1016/j.apenergy.2024.122977)

[4] **Mukherjee S.**, “*Challenges to Rural Service Transformers on Increased Electric Vehicle Charging Infrastructure*”, 2023 IEEE IAS Rural Electric Power Conference, Apr.2023, DOI: [10.1109/REPC49397.2023.00021](https://doi.org/10.1109/REPC49397.2023.00021)

[5] Sanyal J., **Mukherjee S.**, Dumas M., Chintavali S., Lee S., King J., “*Understanding the Computing and Analysis Needs for Resiliency of Power Systems from Severe Weather Impacts*”, 2023 Platform for Advanced Scientific Computing (PASC) Conference, accepted refereed paper, Davos, Switzerland

[6] **Mukherjee S.**, O’Reilly C., Park B., Guler A., King T., Liu Y., Li F., Shuai H., Ojetola S., Schoenwald D., Balash P., Brewer J., Adder J., Lin M., Labarbara K., Prica M., Lederer A., Petri M., Folga S., Thimmapuram P., Liu W., Watson J. “*Near Term Reliability and Resiliency – Final Report*”, DOI Identifier: <https://doi.org/10.2172/1905237>

[8] Sun H., Li F., Sticht C., **Mukherjee S.**, “*Circular Trajectory Approach for Online Sinusoidal Signal Distortion Monitoring and Visualization*” Early Access Publication, Journal Publication, IEEE Transactions on Smart Grid, DOI: [10.1109/TSG.2022.3156364](https://doi.org/10.1109/TSG.2022.3156364)

[9] Sun H., Li F., Sticht C., **Mukherjee S.**, “*Outage Classification of Power Distribution Systems with Machine Learning and Real World Data*”, 2022 IEEE PES General Meeting, DOI: [10.1109/PESGM48719.2022.9916833](https://doi.org/10.1109/PESGM48719.2022.9916833)

[10] Zhao J., Li F., **Mukherjee S.**, Sticht C., “*Deep Reinforcement Learning based Model-free On-line Dynamic Multi-Microgrid Formation to Enhance Resilience*” IEEE Transactions on Smart Grid, peer reviewed, accepted paper, IEEE PES 2022, DOI: <https://doi.org/10.1109/tsg.2022.3160387>

[11] **Mukherjee S.**, Marshall M., Smith T., Piescirovsky E., Snyder I, Sticht C., “*Adaptive Protective Relay Settings – A Vision of the Future*”, 2022 IEEE PES Rural Electric Power Conference, Savannah, GA, accepted refereed paper, DOI: [10.1109/REPEC55671.2022.00013](https://doi.org/10.1109/REPEC55671.2022.00013)

[12] **Mukherjee S.**, “*A Hub-and-Spoke approach to Optimizing Energy Wheeling of Renewable Resources*” 2021 IEEE PES/IAS Power Africa, DOI: [10.1109/PowerAfrica52236.2021.9543433](https://doi.org/10.1109/PowerAfrica52236.2021.9543433)

[13] Matthew Langholtz *, Ingrid Busch, Abishek Kasturi, Michael Hilliard, Joanna McFarlane, Costas Tsouris, **Srijib Mukherjee**, Olufemi Omitaomu, Susan Kotikot, Melissa Ree Allen, Christopher DeRolph, Maggie R. Davis, Esther S. Parish, “*The economic*

accessibility of CO₂ sequestration through bioenergy with carbon capture and sequestration (BECCS) in the US”, LAND Journal, August 2020, DOI: <https://doi.org/10.11578/1647453>

[14] Piesciorovsky, E, **Mukherjee S.**, Marshall M., Smith T., “*Universal Interface Method to Identify Unknown Pinouts of Intelligent Electronic Devices for Using Real-Time Simulators with Hardware-in-the-Loop*”, Journal: Electrical Power Systems Research, Aug 2020, DOI: <https://doi.org/10.1016/j.epsr.2021.107431>

[15] V. Koritarov, T. Levin, M. Christian, J. Kwon, C. Milostan, Ploussard M. Padhee. Y. Tian. T. Mosier, S.M.Shafiul Alam R. Bhattarai M. Mohanpurkar G. Stark D. Bain M. Craig B. Hadjerioua P. O’Connor **S. Mukherjee**, Stewart P. Balducci, M. Weimar – “*Pumped Storage Hydropower Valuation Guidebook: A Cost-Benefit and Decision Analysis Valuation Framework*”, DOE WPTO, September 2020, DOI: <https://doi.org/10.2172/1770766>

[16] Edmondson Willis., **Mukherjee S.**, “*Adaptive Capacitor Switching for Wind Generation*” IEEE IAS General Meeting, Cincinnati, OH, Jul. 2017, DOI: [10.1109/IAS.2017.8101850](https://doi.org/10.1109/IAS.2017.8101850)

[17] Edmondson Willis., **Mukherjee S.**, “*Adaptive Capacitor Switching for Wind Generation*” AWEA Wind Power Conference, Houston, TX, May 20-23, 2019, DOI: [10.1109/IAS.2017.8101850](https://doi.org/10.1109/IAS.2017.8101850)

[18] **Mukherjee S.**, “*Applying the Distribution System in Grid Restoration/NERC CIP-014 Risk Assessment*” IEEE Rural Electric Power Conference, May 2015, DOI: [10.1109/REPC.2015.21](https://doi.org/10.1109/REPC.2015.21)

[19] **Mukherjee S.**, Gentile T., Morrow D., Kruimer B., “*Large scale renewable energy integration. Recent experiences in the USA*”, US DOE Office of Scientific and Technical Information, July 2012. DOI: <https://www.osti.gov/etdweb/biblio/21594626>

[20] **Mukherjee S.**, Casteneda J., Wind Storage Enhanced Transmission Research and Development: Final Project Report, California Energy Commission, 2012

[21] **Mukherjee S.**, Teleke S., Bandaru V. “*Frequency and Dynamic Power Balancing in Wind and Solar Generation*”, IEEE PES, General Meeting, Detroit, Jul. 2011, DOI: [10.1109/PES.2011.6038995](https://doi.org/10.1109/PES.2011.6038995)

[22] **Mukherjee S.**, Teleke S., Bandaru V., “*Dynamic Power Balancing in Wind Generation*”, GridTech 2011 proceeding, pp.411, New Delhi, India

[23] **Mukherjee S.**, *Variable Generation Forecasting, NERC IVGTF 2.1 Report*, May 2010

[24] Wojszczyk B., **Mukherjee S.**, Morrow D., “*Massive Deployment of Wind Generation: Dynamics and its Impact on Power Grid Operations*”, IREP 2007, SC, Aug. 2007, DOI:

[25] **Mukherjee S.**, “*Screening of Load Patterns and Transmission Planning Alternatives using Decision Trees*”, IREP 2007, SC, Aug 2007, DOI: [10.1109/IREP.2007.4410537](https://doi.org/10.1109/IREP.2007.4410537)

[26] **Mukherjee S.**, Wilson P. “*Training Curriculum for System Dispatchers*”, T&D Magazine, May 1995

[27] **Mukherjee S.**, Lindquist C., “*A Homomorphic Approach to Digital Companding*”, 28th Annual Asilomar Conference on Signals, Systems and Computers. Nov. 1994, Naval Postgraduate School, Monterey, CA, DOI: [10.1109/ACSSC.1994.471597](https://doi.org/10.1109/ACSSC.1994.471597)

[28] **Mukherjee S.**, Recio A., “*Voltage Monitoring using Power Flow Applications*”, IEEE, Southeastcon, 1992, DOI: [10.1109/ISCAS.1992.229943](https://doi.org/10.1109/ISCAS.1992.229943)

[29] **Mukherjee S.**, Recio A., Douligieris C., “*Optimal power flow by linear programming-based optimization*”, IEEE Southeastcon, 1991, DOI: [10.1109/SECON.1992.202407](https://doi.org/10.1109/SECON.1992.202407)

[30] **Mukherjee, Srijob Kantha**, *Optimal Power Flow as Applied to Florida Power and Light Company*, University of Miami), Electrical and Computer Engineering Thesis, Otto G. Richter, Theses Catalogues 1991. DOI: University of Miami, Theses Archives

Relevant US DOE Office of Science and Technical Information (DOE OSTI) Publications as Lead or Co-Author of published Technical Reports:

[1] Near Term Reliability and Resiliency – Final Report, DOI Identifier: <https://doi.org/10.2172/1905237>

[2] Pumped Storage Hydropower Valuation Guidebook: A Cost-Benefit and Decision Analysis Valuation Framework, DOI Identifier: <https://doi.org/10.2172/1770766>

[3] Transmission Innovation Symposium: Modernizing the U.S. Electrical Grid, DOI Identifier: <https://doi.org/10.2172/1825004>

[4] Data and interactive visualization for “The economic accessibility of CO₂ sequestration through bioenergy with carbon capture and sequestration (BECCS)”, DOI Identifier: <https://doi.org/10.11578/1647453>

[5] The Economic Accessibility of CO₂ Sequestration through Bioenergy with Carbon Capture and Storage (BECCS) in the US, DOI Identifier: <https://doi.org/10.3390/land9090299>

[6] A generic method for interfacing IEDs using low voltage interfaces to real-time simulators with hardware in the loop, DOI Identifier: <https://doi.org/10.1016/j.epsr.2021.107431>

[7] Technoeconomic Studies for the Banner Mountain Energy Storage Project Valuation Framework Test Case Study, approved for publication by DOE's Hydro Wires, Water Power Technologies Office (WPTO), DOI Identifier to be listed once published

[8] Technoeconomic Studies for the Goldendale Energy Storage Project Valuation Framework Test Case Study, approved for publication by DOE's Hydro Wires, Water Power Technologies Office (WPTO), DOI Identifier to be listed once published

[9] A Hydropower Facility as an Energy Water Signal Processor, approved for publication by DOE's Hydro Wires, Water Power Technologies Office (WPTO), DOI Identifier to be listed once published