CURRICULUM VITAE

SECTION 1: BIOGRAPHICAL

Surname: Saleh Given Names: Saleh A. M.

Faculty/Department Address:

Department of Electrical and Computer Engineering

P.O. Box 4400

Fredericton, New Brunswick, Canada

E3B 5A3

Office Phone: (506) 453-4668

Webpage: www.ece.unb.ca/saleh

Home Address:

700 Forest Hill Rd., Apt. 814

Fredericton, New Brunswick, Canada

E3B 5X9

Home Phone: (506) 454-0203

SECTION 2: EDUCATION

Post Secondary Education

May 2007	Memorial University of Newfoundland, PhD, Electrical Engineering
October 2003	Memorial University of Newfoundland, M.Sc., Electrical Engineering
July 1996	Bir Ziet University, B.Sc., Electrical Engineering

Graduate Theses

1. PhD Thesis: Wavelet Modulated DC-AC Power Inverters.
2. M.Sc. Thesis: A Wavelet Packet Transform-Based Technique for Three-Phase Power Transformer Protection.

General Areas of Academic Interest

Electric machine analysis and design; transient disturbances detection and diagnostics in power systems, power electronic converters and electric machines; variable speed motor drives; power electronics and motor drives; power devices and electric power systems; digital protection of power systems, power electronic converters, renewable energy systems, electric machines, and electric motor drives; power electronic converters simulation, design and modulation; applications of signal processing in electric motor drives modeling, operation, control and design; power quality monitoring and improvement; power system transient stability; power system simulation; power systems control; and renewable energy systems design, analysis, operation, control, and utilization.

SECTION 3: EMPLOYMENT

- July 2020-2023: Director of Graduate Studies, Department of Electrical and Computer Engineering, The University of New Brunswick, Fredericton.
- January 2020-: Professor, Department of Electrical and Computer Engineering, The University of New Brunswick, Fredericton.
- July 2014-2020: Associate Professor (tenured in July 2017), Department of Electrical and Computer Engineering, The University of New Brunswick, Fredericton.

- September 2011-2014: Assistant Professor, Department of Electrical and Computer Engineering, The University of New Brunswick, Fredericton.
- April 2007-September 2011: Instructor and Researcher, School of Ocean Technology, Marine Institute, Memorial University of Newfoundland.
- September 2001-April 2007: Researcher and Teaching Assistant, Memorial University of Newfoundland.
- July 1996-June 2001: Electrical Engineer, Jericho Steel Factory.

Distinctions, Honours, Fellowships

1. Fellow of School of Graduate Studies (SGS) 2002-2004, Memorial University of Newfoundland.
2. Graduate Students Union (GSU) Excellence in Research Award 2004, Memorial University of Newfoundland.
3. NSERC Doctoral Award 2005-2007.
4. Fellow of School of Graduate Studies (SGS) 2005-2007, Memorial University of Newfoundland.
5. Senior Member, Institute of Electrical and Electronics Engineers (IEEE), Since 2010.
6. Dr. Balasubramanian Excellence in Teaching Award, University of New Brunswick, 2014.
7. Dr. Balasubramanian Excellence in Teaching Award, University of New Brunswick, 2015.
8. Harrison McCain Young Scholar Award, University of New Brunswick, 2015.
9. First Prize Paper Award, IEEE Transactions on Industry Application, 2016.
10. IEEE Industry Application Society 2017-2019 Distinguished Lecturer: Digital Protective Relays.

11. Dr. Balasubramanian Excellence in Teaching Award, University of New Brunswick, 2017.
12. IEEE IAS Power System Engineering Committee Paper Award, 2018.
13. The University of New Brunswick Merit Award in Research and Scientific Contributions, 2020.
14. IEEE IAS I&CPS Technical Achievement Award, 2023.
15. IEEE IAS Power System Engineering Committee Paper Award, 2023.

SECTION 4: DISSEMINATION OF KNOWLEDGE

Direction of Research of Undergraduate or Graduate Studies

1. Saheen, Erdinc, Control and Operation of Power Systems with 100% Renewable Generation, 2024-2025, Visiting Scholar.
2. Jee, Anna, Minimizing Common-Mode Voltages and Currents in Motor Drives, 2023-, Masters.
3. MacMillan, Matthew, Wireless Power Transfer, 2023-, Masters.
4. Belliveau, Ethan, Wireless Electric Vehicle Charging, 2023-, Masters
5. Zendul, Eric, Protective Measures Against GIC, 2022-2024, Masters.
6. McSporran, Eleanor Chloe, One-Node Implementation of Smart Grid Functions, 2022-2024, Masters.
7. Jewett, Danielle, Design and Analysis of Grounding Systems, 2021-2023, Masters.
8. Tahmina, Liza, Frequency-Based Survivability Analysis of Power Systems, 2020-2021, Masters.
9. Rashedul Alam, Power System Survivability, 2018-2021, Masters.

10. LaRocque, Damien, Implementing Smart Grid Functions, 2018-2018, Bachalors.

11. Gabriel Vega Lara, Boris, State-Space Modeling for Loads in Smart Grid Functions, 2018-2018, Visiting Scholar.

12. De Lavaga, Osleni, Allocation of Storage Systems in Power Systems, 2019-2024, Doctorate.

13. Garcia, Zaid, Stability of Power Systems with Renewable Power Generation, 2018-2019, Visiting Scholar.

14. St-Onge, Xavier, New Power Transformers-Storage for Demand Response, 2017-2019, Masters.

15. Richard, Christian, Solid-state Power Transformers, 2017-2020, Masters.

16. Abed Al-Rahman Al-Dik, Control Structures for Smart Grid Applications, 2016-2018, Doctorate.

17. Woo, Jeffery, Impacts of Smart Grid Functions on Frequency Stability, 2016-2019, Masters.

18. Ryan McSheffery, Frequency-Frame Digital Protection for Power Converters, 2016-2018, Masters.

19. Petrus Pijenburg, Bus-Split Aggregation and Control of Residential and Small Commercial Loads, 2015-2019, Doctorate.

20. Ryan Meng, Embedded Digital Protection for Storage Systems, 2016-2018, Masters.

21. Haider Mahmoud, Predictive Current Controllers for Single-Phase Grid Connected DGUs, 2013-2018, Doctorate.

22. Petrus Pijenburg, Numerical Modeling of Residential Loads for Smart Grid Applications, 2013-2015, Masters.

23. Osama Bushnaq, Dyadic Reference-Frame Method for Monitoring Residential Loads, for Smart Grid Applications, 2014-2016, Graduate Student.

24. Saadmaan Rahman, Multi-Level AC-DC Converter for PMG-Based Wind Energy Systems, 2014-2016, Masters.

25. Allen Bradley, High Voltage Transformerless DC-AC Power Electronic Converters for Plasma Generators, 2014-2016, Masters.

26. Sarah Buck, Control and Operation of Grid-Connected Storage Systems, 2016-2016, Bachelors.

27. McDonald, Katie, Control and Operation of Reverse Fly-back DC PECs, 2017-2018, Bachelors.

28. St-Onge, Xavier, Multi-level AC-DC PEC, 2016-2016, Bachelors.

29. McGivney, William, PMG-Based WECS with a Storage System, 2016-2016, Bachelors.

30. McLeod, Dylan, PMG-Based WECS with a Storage System, 2016-2016, Bachalors.

31. Johnathan Duke, Design and Operation of Driver Circuits for Three phase AC-DC Converters, 2012.

32. Ryan Meng, Laboratory Scale Micro-Grid Power Systems, 2013-2016, Bachelors.

33. Bradley Jones, Modeling Power Electronic Fed Plasma Generators, 2012-2013, Bachelors.

34. Donald MacLean, High Frequency Resonant Induction Heater, 2012-2013, Bachalors.

35. Johnathan Duke, Design and Operation of Driver Circuits for Three phase AC-DC Converters, 2012.

36. Darien M. Arbolaez, Signal Processing Methods for Determining the Power Factor, 2012, Exchange International Student.

37. Adel Aktaibi, Digital Differential Protection of Power Transformers, 2010-2015, Doctorate.

38. Sheikh Rabbi, Single-Phase Induction Generator in Wind Energy Applications, 2009-2011, Masters.

39. Razzqal Alahshan, Centralized Energy Management for Micro-Grid Systems, 2009-2013, Doctorate.

40. Jessica Butller, Electrostatic Filtering System, 2010 - 2011, Bachalors.

41. Azziddin Razali, High Frequency DC Switched Power Supplies, 2009-2013, Doctorate (co-supervisor).

42. Imran Dar, Harmonic-Based Differential Protective Relays, 2008-2010, Masters (co-supervisor).

43. Adam Gill, Off-Board Electronic Life Saving and Alarm System, 2009-2010, Bachelors.

44. David Bartlet, Solar Panel Tracking System, 2008-2009, Bachelors.

45. Benjamin Scaplen, Analog WPT-Based Transformer Differential Protection, 2008-2009, Bachelors.

46. Kareem Abdul Latiff, Stand-alone Wind Energy Conversion System, 2007-2008, Bachelors.

47. Matthew Appleby, Grid-Connected Permanent Magnet Wind Generator, 2007-2008, Bachelors.

SECTION 5: RESEARCH, SCHOLARLY OR CREATIVE ACTIVITY

Articles Published or Accepted for Publication in Refereed Journals

JP1– S. A. Saleh, "Development and Performance Testing of a V/f Control for Permanent Magnet Synchronous Motor Drives with Wavelet Modulated Power Electronic Converters", *IEEE Trans. on Industry Applications*, Vol. 60, No. 3, pp. 5025–5037, 2024.

JP2– S. A. Saleh, "The Development and Performance Testing of a V/f Control for Induction Motors Fed by Wavelet Modulated Power Electronic Converters", *IEEE Trans. on Industry Applications*, Vol. 60, No. 3, pp. 5012–5024, 2024.

JP3– S. A. Saleh, E. Zundel, G. Young-Morris, J. Meng, J. Cardenas, E. F. S. Hill, and S. Brown, "Impacts of Transformer Loading on the Harmonic Distortion Created by GIC Flows", *IEEE Trans. on Industry Applications*, Vol. 60, No. 3, pp. 4666–4676, 2024.

JP4– S. A. Saleh, O. Betancourt, E. Ozkop, R. Ahshan, E. Zundel, Z. Sanchez, and J. Meng, "The Analysis and Modeling of Voltage Survivability in Power Systems", *IEEE Trans. on Industry Applications*, Vol. 60, No. 3, pp. 4654–4665, 2024.

JP5– S. A. Saleh, M. Valdes, P.E. Sutherland, and M. Haj-Ahmed, and E. W. Zundel, "Phaselet-Based Arc Flash Relay Against Low Voltage Side Arcing Current Faults in MV-LV Power Transformers", *IEEE Trans. on Industry Applications*, Vol. 59, No. 6, pp. 7462–7474, 2023.

JP6– S. A. Saleh, E. Ozkop, A. Al-Durra, J. Meng, T. Hill, and M. Valdes, "Effects of Sampled-Values Data Quality on Responses of Time-Frequency Based Digital Relays", *IEEE Trans. on Industry Applications*, Vol. 59, No. 5, pp. 5443–5452, 2023.

JP7– S. A. Saleh, E. W. Zundel, G. Young-Morris, D. Jewett, S. Brown, E. F. S. Hill and J. Meng, "Investigating Harmonic Distortion in Power Transformers Due to Geomagnetically Induced Current Flows", *IEEE Trans. on Industry Applications*, Vol. 59, No. 5, pp. 5432–5442, 2023.

JP8– S. A. Saleh, S. Kanukollu, and A. Al-Durra, "Phaselet Transform-Based Digital Ground Fault Protection of Grid-Connected Photovoltaic Systems", *IEEE Trans. on Industry Applications*, Vol. 59, No. 5, pp. 5398–5410, 2023.

JP9– S. A. Saleh, E. Ozkop, A. Al-Durra, T. Hill, J. Meng, and M. Valdes, "On the Assessment of Sampling Rate Impacts on Responses of Digital Protective Relays", *IEEE Trans. on Industry Applications*, Vol. 59, No. 5, pp. 5420–5431, 2023.

JP10– S. A. Saleh, "Maximum Resolution Based Method for Balancing Capacitor Voltages in 7-Level Single Phase Flying-Capacitor Wavelet Modulated Inverters", *IEEE Trans. on Industry Applications*, Vol. 59, No. 4, pp. 5019–5031, 2023.

JP11– S. Saleh, M. Valdes, R. Ahshan, D. Jewett, C. Mardegan, J. Meng, and S. Panetta, "Testing Ground Fault Protection of Generating Units with Frequency-Selective Grounding", *IEEE Trans. on Industry Applications*, Vol. 59, No. 2, pp. 2400–2412, 2023.

JP12– S. Saleh, M. Valdes, E. Ozkop, A. Yuksel, A. Al-Durra, D. Jewett, J. Meng, and S. Panett, "Experimental Assessment of Ground Fault Protection in Frequency-Selective Grounded Systems Fed by a Single Transformer", *IEEE Trans. on Industry Applications*, Vol. 59, No. 2, pp. 2386–2399, 2023.

JP13– S. A. Saleh E. Ozkop, B. Nahid-Mobarakeh, A. Rubaai, K. M. Muttaqi, and S. Pradhan, "Survivability-Based Protection for Electric Motor Drive Systems-Part II: Three Phase Permanent Magnet Synchronous Motor Drives", *IEEE Trans. on Industry Applications*, Vol. 59, No. 3, pp. 2760–2771, 2023.

JP14– S. A. Saleh, E. Ozkop, R. Ahshan, A. Al-Durra, M. E. Valdes, C. Mardegan, "Experimental Performance Evaluation of the $\alpha\beta 0$-Based Bus Differential Protection", *IEEE Trans. on Industry Applications*, Vol. 59, No. 3, pp. 2919–2931, 2023.

JP15– S. A. Saleh, S. Kanukollu, and A. Al-Durra, "Performance Assessment of Frequency Selective Grounding for Grid-Connected Photovoltaic Systems", *IEEE Trans. on Power Delivery*, Vol. 38, No. 2, pp. 1138–1147, 2023.

JP16– S. A. Saleh, D. Jewett, and S. Panetta, "The Analysis, Modeling, and Capabilities of Grounding System Designs", *IEEE Trans. on Industry Applications*, Vol. 58, No. 5, pp. 5908–5920, 2022.

JP17– S. A. Saleh, D. Jewett, A. Al-Durra, S. Kanukollu, J. Cardenas, M. Valdes, J. Meng, and S. Panetta, "Experimental Assessment of Grounding System Impacts on Ground Currents and Transient Over-Voltage", *IEEE Trans. on Industry Applications*, Vol. 58, No. 5, pp. 5987–6001, 2022.

JP18– S. A. Saleh, D. Jewett, A. Al-Durra, S. Kanukollu, J. Cardenas, M. E. Valdes, and S. A. R. Panetta, "Evaluating the Impacts of Grounding Systems on Ground Currents and Transient Over-Voltage", *IEEE Trans. on Industry Applications*, Vol. 58, No. 5, pp. 6002–6013, 2022.

JP19– S. A. Saleh, "The Wavelet Modulation Technique for 3ϕ, 5-Level, Power Electronic Converters-Part II: Implementation and Experimental Performance", *IEEE Trans. on Industry Applications*, Vol. 58, No. 5, pp. 5819–5831, 2022.

JP20– S. A. Saleh, "The Wavelet Modulation Technique for 3ϕ, 5-Level, Power Electronic Converters-Part I: Development and Testing", *IEEE Trans. on Industry Applications*,Vol. 58, No. 5, pp. 5805–5818, 2022.

JP21– S. A. Saleh, E. Ozkop, M. Valdes, A. Yuksel, M. Haj-Ahmed, S. G. Sanchez, and C. Mardegan, "On The Factors Affecting Battery Unit Contributions to Fault Currents in Grid-connected Battery Storage Systems", *IEEE Trans. on Industry Applications*, Vol. 58, No. 3, pp. 3019–3028, 2022.

JP22– M. R. A. Chowdhury, S. A. Saleh, O. A. Betancourt, J. L. Cardenas-Barrera, and E. Castillo-Guerra, "Employing Battery Storage Systems to Improve Power System Survivability", *IEEE Trans. on Industry Applications*, Vol. 58, No. 2, pp. 1858–1868, 2022.

JP23– S. A. Saleh, E. Ozkop, M. S. Ayas, K. M. Muttaqi, and B. Nahid-Mobarakeh, "Survivability-Based Protection for Electric Motor Drive Systems-Part I: 3ϕ Induction Motor Drives", *IEEE Trans. on Industry Applications*, Vol. 58, No. 2, pp. 1797–1808, 2022.

JP24– S. A. Saleh, R. Ahshan, M. Haj-Ahmed, J. L. Cardenas-Barrera, J. Meng, and E. Castillo-Guerra, "Energy Not-Served Based Method for Assessing Smart Grid Functions in Residential Loads", *IEEE Trans. on Industry Applications*, Vol. 58, No. 2, pp. 1720–1729, 2022.

JP25– S. A. Saleh and M. R. A. Chowdhury, "Survivability Analysis of Impacts of Load-Side Activities on Power Systems", *IEEE Trans. on Industry Applications*, Vol. 58, No. 2, pp. 1869–1878, 2022.

JP26– S. A. Saleh, J. L. Cardenas-Barrera, E. Castillo-Guerra, J. Meng, B. Alsayid, and L. Chang, "Planning Smart Grid Functions in Residential Loads Using a Virtual Equivalent Battery Storage Unit", *IEEE Trans. on Industry Applications*, Vol. 57, No. 5, pp. 4441–4455, 2021.

JP27– S. A. Saleh and R. Ahshan, "Parameter Adjustment for the Droop Control Operating a Discharge PEC in PMG-Based WECSs with Generator-Charged Battery Units", *IEEE Access*, Vol. 9, pp. 89064–89078, 2021.

JP28– S. A. Saleh, E. Ozkop, C. S. Mardegan, and M. E. Valdes, "Testing a Bus Differential Protection for Buses Interconnecting Battery Storage Systems", *IEEE Trans. on Industry Applications*, Vol. 57, No. 4, pp. 3511–3521, 2021.

JP29– S. A. Saleh and E. Ozkop, "Digital Differential Protection for 3ϕ Solid-State Transformers", *IEEE Trans. on Industry Applications*, Vol. 57, No. 4, pp. 3474–3486, 2021.

JP30– S. A. Saleh, R. Ahshan, and A. Al-Durra, "Developing and Testing Model-Predictive Control to Minimize Ground Potentials in Transformerless Interconnected 5-Level Power Electronic Converters", *IEEE Trans. on Industry Applications*, Vol. 57, No. 4, pp. 3500–3510, 2021.

JP31– S. A. Saleh, E. Ozkop, and A Rubaai, "Testing the Frame-Angle-Based Direct Torque Control for 3ϕ Induction Motor Drives", *IEEE Trans. on Industry Applications*, Vol. 57, No. 3, pp. 2918–2930, 2021.

JP32– S. A. Saleh and X. F. St. Onge, "A New Structure for PMG-Based WECSs With Battery Storage Systems", *IEEE Access*, Vol. 8, pp. 190356–190366, 2020.

JP33– R. Ahshan, S. A. Saleh, and A. Al-Badi, "Performance Analysis of a Dq Power Flow-Based Energy Storage Control System for Microgrid Applications", *IEEE Access*, Vol. 8, pp. 178706–178721, 2020.

JP34– S. A. Saleh, E. Ozkop, X. F. St. Onge, and C. Richard, "Testing the Performance of a $dq0$ Phaselet Transform-Based Digital Differential Protection for 3ϕ Converter Transformers", *IEEE Trans. on Industry Applications*, Vol. 56, No. 6, pp. 6258–6271, 2020.

JP35– S. A. Saleh, A. Al-Durra, and R. Ahshan, "On the Ground Potentials and Grounding Circuits of Transformerless Grid-Connected Multi-Level Power Electronic Converters", *IEEE Trans. on Industry Applications*, Vol. 56, No. 6, pp. 6286–6297, 2020.

JP36– X. Gong, E. Castillo-Guerra, J. L. Cardenas-Barrera, B. Cao, S. A. Saleh, and L. Chang, "Robust Hierarchical Control Mechanism for Aggregated Thermostatically Controlled Loads", *IEEE Trans. on Smart Grid*, Vol. 12, No. 1, pp. 453–467, 2021.

JP37– S. A. Saleh, E. Ozkop, M. S. Ayas, T. Boileau, and B. Nahid-Mobarakeh, "Employing Fault Currents in the Reliability Analysis of Motor Drives", IEEE Trans. on Industry Applications, Vol. 56, No. 4, pp. 4521–4531, 2020.

JP38– S. A. Saleh, J. Wo, X. St. Onge, and E. Castillo-Guerra, "A New Approach for Estimating Frequency Variations Due to Smart Grid Functions", *IEEE Trans. on Industry Applications*, Vol. 56, No. 3, pp. 2292–2303, 2020.

JP39– S. A. Saleh, E. Ozkop, R. J. Meng, Z. G. Sanchez, and O. A. Betancourt, "Selecting Locations and Sizes of Battery Storage Systems Based on the Frequency of the Center-of-Inertia and Principle Component Analysis", *IEEE Trans. on Industry Applications*, Vol. 56, No. 2, pp. 1040–1051, 2020.

JP40– S. A. Saleh, E. Ozkop, E. Castillo-Guerra, and P. Pijnenburg, "Developing and Testing a Unit Commitment-Based Controller of Bus-Split Aggregated Residential Electric Water Heaters", *IEEE Trans. on Industry Applications*, Vol. 56, No. 2, pp. 1124–1135, 2020.

JP41– S. A. Saleh, C. Richard, X. F. St-Onge, K. McDonald, E. Ozkop, B. Alsayid, and L. Chang, 'Solid-State Transformers for Distribution Systems-Part II: Deployment Challenges", *IEEE Trans. on Industry Applications*, Vol. 55, No. 6, pp. 5708–5716, 2019.

JP42– X. Gong, J. L. Cardenas-Barrera, E. Castillo-Guerra, B. Cao, S. A. Saleh, and L. Chang, 'Bottom-Up Load Forecasting with Markov-Based Error Reduction Method for Aggregated Domestic Electric Water Heaters", *IEEE Trans. on Industry Applications*, Vol. 55, No. 6, pp. 6401–6413, 2019.

JP43– S. A. Saleh, X. F. St-Onge, C. Richard, E. Ozkop, and S. A. R. Panetta, "The Design and Testing of a Frequency-Selective Grounding for 3ϕ Power Transformers", *IEEE Trans. on Industry Applications*, Vol. 56, No. 1, pp. 74–87, 2020.

JP44– S. A. Saleh, M. E. Valdes, C. S. Mardegan, and B. Alsayid, "The State-of-the-Art Methods for Digital Detection and Identification of Arcing Current Faults", *IEEE Trans. on Industry Applications*, Vol. 55, No. 5, pp. 4536–4550, 2019.

JP45– S. A. Saleh, C. Richard, X. F. St-Onge, K. McDonald, E. Ozkop, B. Alsayid, and L. Chang, "Solid-State Transformers for Distribution Systems-Part I: Technology and Construction", *IEEE Trans. on Industry Applications*, Vol. 55, No. 5, pp. 4524–4535, 2019.

JP46– C. Richard, K. McDonald, X. F. St-Onge, and S. A. Saleh, "A New Isolated DC-DC Converter for Discontinuous Input and Continuous Output", *IEEE Trans. on Industry Applications*, Vol. 55, No. 4, pp. 4215–4224, 2019.

JP47– S. A. Saleh and R. Rubaai, "Extending the Frame-Angle-Based Direct Torque Control of PMSM Drives to Low Speed Operation", *IEEE Trans. on Industry Applications*, Vol. 55, No. 3, pp. 3138–3150, 2019.

JP48– S. A. Saleh, C. Richard, X. F. St. Onge, J. Meng, and E. Castillo-Guerra, "Comparing the Performance of Protection Coordination and Digital Modular Protection for Grid-Connected Battery Storage Systems", *IEEE Trans. on Industry Applications*, Vol. 55, No. 3, pp. 2440–2454, 2019.

JP49– S. A. Saleh, "Testing a Unit Commitment Based Controller for Grid-Connected PMG-Based WECSs with Generator-Charged Battery Units", *IEEE Trans. on Industry Applications*, Vol. 55, No. 3, pp. 2185–2197, 2019.

JP50– S. A. Saleh, "On The Performance of the Frame-Angle Controller for 3ϕ Interconnected PV Systems", *IEEE Trans. on Industry Applications*, Vol. 55, No. 2, pp. 1189–1201, 2019.

JP51– X. F. St. Onge, J. Cameron, S. A. Saleh, and E. Scheme, "A Symmetrical Component Feature Extraction Method for Fault Detection in Induction Machines", *IEEE Trans. on Industrial Electronics*, Vol. 66, No. 9, pp. 7281–7289, 2019.

JP52– X. F. St. Onge, C. Richard, K. M. McDonald, and S. A. Saleh, "Performance Testing of an Active Multi-Port DC-Link for Grid-Connected PMG-Based WECSs", *IEEE Trans. on Industry Applications*, Vol. 54, No. 6, pp. 5579–5589, 2018.

JP53– S. A. Saleh, "Testing the Performance of the Wavelet Modulation Technique for 1ϕ CHB Multi-Level DC-AC Power Electronic Converters", *IEEE Trans. on Industry Applications*, Vol. 54, No. 3, pp. 2885–2898, 2018.

JP54– S. A. Saleh, R. McSheffery, and R. Meng, "Testing the Performance of the Digital Modular Protection for Grid-Connected Battery Storage Systems", *IEEE Trans. on Industry Applications*, Vol. 54, No. 3, pp. 2059–2070, 2018.

JP55– S. A. Saleh and A. Rubaai, "The Development and Performance Evaluation of a Frame-Angle-Based Direct Torque Controller for PMSM Drives", *IEEE Trans. on Industry Applications*, Vol. 54, No. 3, pp. 2806–2820, 2018.

JP56– S. A. Saleh, "Phaselet Transform-Based Approach for Detecting Voltage Flickers Due to Distributed Generation Units", *IEEE Trans. on Industry Applications*, Vol. 54, No. 5, pp. 5287–5292, 2018.

JP57– S. A. Saleh, B. Allen, E. Ozkop, and B. G. Colpitts, "Multi-Stage and Multi-Level Power Electronic Converter-Based Power Supply for Plasma DBD Devices", *IEEE Trans. on Industrial Electronics*, Vol. 65, No. 7, pp. 5466–5475, 2018.

JP58– S. A. Saleh, R. Meng, R. McSheffery, S. E. Buck, and E. Ozkop, "Performance of Multi-Frame Digital Interconnection Protection for Distributed Co-Generation Systems", *IEEE Trans. on Industry Applications*, Vol. 54, No. 2, pp. 1166–1181, 2018.

JP59– S. A. Saleh, P. Pijnenburg, E. Castillo-Guerra, and L. Chang, "A Modified Bus-Split Method for Aggregating Distributed Generation Units", *IEEE Trans. on Industry Applications*, Vol. 54, No. 2, pp. 1080–1091, 2018.

JP60– S. A. Saleh, "The Formulation of a Power Flow Using d-q Reference Frame Components-Part II: Unbalanced 3ϕ Systems", *IEEE Trans. on Industry Applications*, Vol. 54, No. 2, pp. 1092–1107, 2018.

JP61– P. Pijnenburg and S. A. Saleh, "Testing the Performance of Bus-Split Aggregation Method for Residential Loads", *IEEE Trans. on Industry Applications*, Vol. 54, No. 1, pp. 39–49, 2018.

JP62– H. Mohomad, S. A. Saleh, and L. Chang, "Disturbance Estimator-Based Predictive Current Controller for Single-Phase Interconnected PV Systems", *IEEE Trans. on Industry Applications*, Vol. 53, No. 5, pp. 4201–4209, 2017.

JP63– S. A. Saleh, R. Meng, and R. McSheffery, "Evaluating the Performance of Digital Modular Protection for Grid-Connected Permanent Magnet Generator-Based Wind

energy conversion Systems with Battery Storage Systems", *IEEE Trans. on Industry Applications*, Vol. 53, No. 5, pp. 4186–4200, 2017.

JP64– S. A. Saleh, "Testing the Performance of a Resolution-Level MPPT Controller for PMG-Based Wind Energy Conversion Systems", *IEEE Trans. on Industry Applications*, Vol. 53, No. 3, 2526–2540, 2017.

JP65– F. Rabbi, S. A. Saleh, and M. A. Rahman, "A Novel Technique Using Multi-Resolution Wavelet Packet Decomposition for Real Time Diagnosis of Hunting in Line Start IPM Motor Drives", *IEEE Trans. on Industry Applications*, Vol. 53, No. 3, pp. 3005–3019, 2017.

JP66– S. A. Saleh, P. Pijnenburg, and E. Castillo-Guerra, "Load Aggregation From Generation-Follows-Load to Load-Follows-Generation: Residential Loads", *IEEE Trans. on Industry Applications*, Vol. 53, No. 2, pp. 833–842, 2017.

JP67– S. A. Saleh, "The Analysis and Development of a Power Flow-Based Controller for Micro-Grid Systems", *IEEE Trans. on Industry Applications*, Vol. 53, No. 2, 843–854, 2017.

JP68– S. A. Saleh and E. Ozkop, "Phaselet-Based Method for Detecting Electric Faults in 3ϕ Induction Motor Drives-Part II: Performance Evaluation", *IEEE Trans. on Industry Applications*, Vol. 53, No. 3, pp. 2988–2996, 2017.

JP69– S. A. Saleh and E. Ozkop, "Phaselet-Based Method for Detecting Electric Faults in 3ϕ Induction Motor Drives-Part I: Analysis and Development", *IEEE Trans. on Industry Applications*, Vol. 53, No. 3, pp. 2976–2987, 2017.

JP70– S. A. Saleh, E. Ozkop, and A. S. Aljankawey, "The Development of a Coordinated Anti-Islanding Protection for Collector Systems with Multiple Distributed Generation Units", *IEEE Trans. on Industry Applications*, Vol. 52, No. 6, pp. 4656–4667, 2016.

JP71– S. A. Saleh, R. Meng, and J. Meng, "The Performance of a Digital Interconnection Protection for Grid-Connected WECSs", *IEEE Trans. on Industry Applications*, Vol. 52, No. 5, pp. 3714–3728, 2016.

JP72– S. A. Saleh, "The Formulation of a Power Flow Using d-q Reference Frame Components-Part I: Balanced 3ϕ Systems", *IEEE Trans. on Industry Applications*, Vol. 52, No. 5, pp. 3682–3693, 2016.

JP73– S. A. Saleh, S. Aljankawey, E. Ozkop and R. Meng, "On the Experimental Performance of a Coordinated Anti-Islanding Protection for Systems with Multiple DGUs", *IEEE Trans. on Power Electronics*, Vol. 32, No. 2, pp. 1106–1123, 2017.

JP74– P. Pijnenburg, S. A. Saleh, and P. R. McGaw, "Performance Evaluation of the ZIP Model-Phaselet Frame Approach for Identifying Appliances in Residential Loads", *IEEE Trans. on Industry Applications*, Vol. 52, No. 4, pp. 3408–3421, 2016..

JP75– S. A. Saleh, A. S. Aljankawey, R. Errouissi, and M. A. Rahman, "Phase-Based Digital Protection for Arc Flash Faults", *IEEE Trans. on Industry Applications*, Vol. 52, No. 3, pp. 2110–2121, 2016.

JP76– S. A. Saleh, E. Ozkop, and A. S. Aljankawey, "Performance of the Phaselet Frames-Based Digital Protection For Distributed Generation Units", *IEEE Trans. on Industry Applications*, Vol. 52, No. 3, pp. 2095–2109, 2016.

JP77– S. A. Saleh, "'The Extended Newton-Phaselet Method for Determining the Reactive Power from the Active Power in Single Phase Systems", *IEEE Trans. on Industry Applications*, Vol. 52, No. 2, pp. 1297–1307, 2016.

JP78– S. A. Saleh, A. S. Aljankawey, R. Meng, J. Meng, L. Chang, and C. P. Diduch, "Apparent Power-Based Anti-Islanding Protection for Distributed Co-Generation Systems", *IEEE Trans. on Industry Applications*, Vol. 52, No. 1, pp. 83–98, 2016.

JP79– S. A. Saleh, A. S. Aljankawey, R. Meng, J. Meng, L. Chang, and C. P. Diduch, "Impacts of Grounding Configurations on Responses of Ground Protective Relays for DFIG-Based WECSs-Part II: High-Impedance Ground Faults", *IEEE Trans. on Industry Applications*, Vol. 52, No. 2, pp. 1204–1214, 2016.

JP80– S. A. Saleh, A. S. Aljankawey, R. Errouissi, and E. Castillo-Guerra, "Extracting the Phase of Fault Currents: A New Approach for Identifying Arc Flash Faults", *IEEE Trans. on Industry Applications*, Vol. 52, No. 2, pp. 1226–1240, 2016.

JP81– S. A. Saleh, "On the Design and Capacity of a Grounding Configuration for Grid-Connected DGUs", *IEEE Trans. on Industry Applications*, Vol. 51, No. 6, pp. 5366-5375, 2015.

JP82– S. A. Saleh, A. S. Aljankawey, M. A. Khaizaran and B. A. Sayed, "Influence of Power Electronic Converters on Current-Voltage Behaviors During Faults in DGU's-Part I: Wind Energy Conversion Systems", *IEEE Trans. on Industry Applications*, Vol. 51, No. 4, pp. 2819-2831, 2015.

JP83– S. A. Saleh, A. S. Aljankawey, B. A. Sayed, and M. A. Khaizaran, "Influence of Power Electronic Converters on Current-Voltage Behaviors During Faults in DGU's-Part II: Photovoltaic Systems", *IEEE Trans. on Industry Applications*, Vol. 51, No. 4, pp. 2832-2845, 2015.

JP84– S. A. Saleh, A. S. Aljankawey, R. Meng, J. Meng, C. P. Diduch, and L. Chang, "Impacts of Grounding Configurations on Responses of Ground Protective Relays for DFIG-Based WECSs-Part I: Solid Ground Faults", *IEEE Trans. on Industry Applications*, Vol. 51, No. 4, pp. 2804-2818, 2015.

JP85– S. A. Saleh, A. S. Aljankawey, R. Meng, J. Meng, C. P. Diduch, and L. Chang, "Anti-Islanding Protection Based on Signatures Extracted from the Instantaneous Apparent Power", *IEEE Trans. on Power Electronics* Vol. 29, No. 11, pp. 5872–5891, 2014.

JP86– S. A. Saleh, R. Ahshan and M. A. Rahman, "Performance Evaluation of an Embedded d-q WPT-Based Digital Protection for IPMSM Drives", *IEEE Trans. on Industry Applications*, Vol. 50, No. 3, pp. 2277–2291, 2014

JP87– S. A. Saleh, "Signature-Coordinated Digital Multirelay Protection for Microgrid Systems", *IEEE Trans. on Power Electronics* Vol. 29, No. 9, pp. 4614–4623, 2014.

JP88– S. A. Saleh, R. Ahshan, M. A. Rahman, M. A. Khaizaran and B. Alsayid, "Implementing and Testing d-q WPT-Based Digital Protection for Micro-Grid Systems", *IEEE Trans. on Industry Applications*, Vol. 50, No. 3, pp. 2185–2173, 2014.

JP89– S. A. Saleh and M. A. Rahman, "Optimized Resolution-Level for Input-Output Control of 3ϕ VS WM AC-DC Converters", *IEEE Trans. on Industry Applications*, Vol. 50,

No. 2, pp. 1432–1447, 2014 (Among the 50 most popular papers published by the IEEE Transactions on Industry Application).

JP90– S. A. Saleh, "The Implementation and Performance Evaluation of 3ϕ VS Wavelet Modulated AC-DC Converters", *IEEE Trans. on Power Electronics* Vol. 28, No. 3, pp. 1096–1106, 2013.

JP91– S. A. Saleh, A. Aktaibi, R. Ahshan, and M. A. Rahman, "Developing and Implementing $d-q$-axis Wavelet Packet Transform-Based Differential Protection for Power Transformers," *IEEE Trans. on Power Delivery*, Vol. 24, No. 4, pp. 2255–2269, 2012.

JP92– S. A. Saleh, R. Ahshan and C. R. Moloney, "Wavelet-Based Signal Processing Method for Detecting Ice Accretion on Wind Turbines," *IEEE Trans. on Sustainable Energy*, Vol. 3, No. 3, pp. 585–597, 2012.

JP93– S. A. Saleh, and R. Ahshan, "Resolution-Level Controlled WM Inverter for PMG-Based Wind Energy Conversion System," *IEEE Trans. on Industry Applications*, Vol. 48, No. 2, pp. 750–763, 2012.

JP94– S. A. Saleh and M. A. Rahman, "Implementation and Experimental Performance of the Single Phase Wavelet Modulated Inverter," *IEEE Trans. on Power Electronics*, Vol. 26, No. 9, pp. 2650–2661, 2011.

JP95– S. A. Saleh, B. Scaplen and M. A. Rahman, "A New Implementation Method of Wavelet Packet Transform Differential Protection for Power Transformers," *IEEE Trans. on Industry Applications*, Vol. 47, No. 2, pp. 1003–1012, 2011.

JP96– S. A. Saleh, C. R. Moloney and M. A. Rahman, "Analysis and Development of Wavelet Modulation for Three-Phase Voltage Source Inverters," *IEEE Trans. on Industrial Electronics*, Vol. 58, No. 8, pp. 3330–3348, 2011.

JP97– S. A. Saleh and M. A. Rahman, "Development and Experimental Validation of Resolution-Level Controlled Wavelet Modulated Inverters for Three Phase Induction Motor Drives," *IEEE Trans. on Industry Applications*, Vol. 47, No. 4, pp. 1958–1970, 2011.

JP98– S. A. Saleh, M. A. S. K. Khan and M. A. Rahman, "Steady-State Performance Analysis and Modeling of Directly Coupled Interior Permanent Magnet Wind Generators," *IET Renewable Power Generation*, Vol. 5, No. 2, pp. 137–147, 2011.

JP99– S. A. Saleh and M. A. Rahman, "Testing of a Wavelet Packet Transform-Based Differential Protection for Resistance-Grounded Three-Phase Transformers," *IEEE Trans. on Industry Applications*, Vol. 46, No. 3, pp. 1109–1117, 2010.

JP100– S. A. Saleh and M. A. Rahman, "Development and Testing of a New Controlled Wavelet Modulated Inverter for IPM Motor Drives," *IEEE Trans. on Industry Applications*, Vol. 46, No. 4, pp. 1630–1643, 2010.

JP101– S. A. Saleh, C. R. Moloney and M. A. Rahman, "Development and Testing of Wavelet Modulation for Single-Phase Inverters," *IEEE Trans. on Industrial Electronics*, Vol. 56, No. 7, pp. 2588–2599, 2009.

JP102– S. A. Saleh and M. A. Rahman, "Analysis and Real-Time Testing of a Controlled Single Phase Wavelet-Modulated Inverter for Capacitor-Run Induction Motors," *IEEE Trans. on Energy Conversion*, Vol. 24, No. 1, pp.21–29, 2009.

JP103– S. A. Saleh, C. R. Moloney and M. A. Rahman, "Implementation of a Dynamic Voltage Restorer System Based on Discrete Wavelet Transforms," *IEEE Trans. on Power Delivery*, Vol. 23, No. 4, pp.2366–2375, 2008.

JP104– S.A. Saleh, T.Radwan and M.A. Rahman, "Real-Time Testing of a WPT-Based Protection Technique for Three-phase Voltage-Source PWM Inverter-Fed Motors", *IEEE Trans. on Power Delivery*, Vol. 22, No. 4, pp.2108–2115, 2007.

JP105– S. A. Saleh and M. A. Rahman, "Real-Time Testing of WPT-Based Protection Algorithm for Three-Phase Power Transformers," *IEEE Trans. on Industry Applications*, Vol. 41, No. 4, pp.1125–1132, 2005.

JP106– S. A. Saleh and M. A. Rahman, "A New Transient Model for Three Phase Power Transformers Using a Wavelet Filter Bank," *IEEE Trans. on Power Delivery*, Vol. 20, No. 2, pp.1409–1416, 2005.

JP107– S. A. Saleh and M. A. Rahman, "Modeling and Protection of a Three-Phase Power Transformer Using Wavelet Packet Transform," *IEEE Trans. on Power Delivery*, Vol. 20, No. 2, pp.1273–1283, 2005.

Refereed Conference Proceedings

C1– S. A. Saleh, A. Jee, J. Meng, E. Ozkop, A. Al-Durra, B. Nahid-Mobarakeh, S. Panetta, and D. Mohla, "Frequency-Selective Grounding for Induction Motor Variable Frequency Drives", *In Proc. of the 59-th IEEE IAS'24 Annual Meeting Conference*, Phoenix, AZ, October 2024.

C2– S. A. Saleh, A. Jee, J. Meng, S. Panetta, and N. G. Minh-Thao, "Multi-Level Converters in Induction Motor Drives: Effects on Common-Mode Voltages", *In Proc. of the 59-th IEEE IAS'24 Annual Meeting Conference*, Phoenix, AZ, October 2024.

C3– S. A. Saleh, A. Jee, J. Meng, E. Ozkop, R. Ahshan, B. Nahid-Mobarakeh, S. Panetta, and D. Mohla, "Frequency-Selective Grounding for Permanent Magnet Synchronous Motor Frequency Drives", *In Proc. of the 59-th IEEE IAS'24 Annual Meeting Conference*, Phoenix, AZ, October 2024.

C4– S. A. Saleh, "Wavelet Modulated Inverters for Reducing Common-Mode Voltages in Variable Frequency Motor Drives", *In Proc. of the 59-th IEEE IAS'24 Annual Meeting Conference*, Phoenix, AZ, October 2024.

C5– S. A. Saleh, E. C. McSporran, J. L. Cardenas Barrera, E. Castillo-Guerra, and C. P. Diduch, "One-Node Method to Implement Smart Grid Functions Using a Battery Storage System", *In Proc. of the 60-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2024)*, Las Vegas, NV, May 2024.

C6– S. A. Saleh, E. C. McSporran, J. L. Cardenas Barrera, E. Castillo-Guerra, and C. P. Diduch, "One-Node Approach to Implement Smart Grid Functions without Storage Units", *In Proc. of the 60-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2024)*, Las Vegas, NV, May 2024.

C7– S. A. Saleh, E. W. Zundel, J. Meng, M. Bourque, G. Young-Morris, E. F. S. Hill, and S. Brown, "Effects of Grounding Impedance on the Second Harmonic Component Produced by GIC Flows", *In Proc. of the 60-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2024)*, Las Vegas, NV, May 2024.

C8– S. A. Saleh, E. W. Zundel, J. Meng, M. Bourque, G. Young-Morris, E. F. S. Hill, and S. Brown, "Second Harmonic-Based Approach to Identify a GIC Flow in Power Transformers", *In Proc. of the 60-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2024)*, Las Vegas, NV, May 2024.

C9– S. A. Saleh, E. W. Zundel, J. Meng, G. Young-Morris, E. F. S. Hill, and S. Brown, "Harmonic Distortions in 3ϕ Auto-Transformers Due to Geomagnetically Induced Currents", *In Proc. of the 60-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2024)*, Las Vegas, NV, May 2024.

C10– S. A. Saleh, E. W. Zundel, D. Jewett, E. F. S. Hill, J. Meng, G. Y. Morris and S. Brown, "Impacts of Loading Level on Harmonic Distortion in 3ϕ Auto-Transformers During GIC Flows", *In Proc. of the 60-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2023)*, Las Vegas, NV, May 2024.

C11– S. Saleh, A. Jee, E. Ozkop, J. Meng, D. Mohla, S. Panetta, and B. Nahid-Mobarakeh, "Impedance Grounding for Variable-Frequency Electric Motor Drives", *In Proc. of the 60-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2024)*, Las Vegas, NV, May 2024.

C12– S. Saleh, M. Haj-Ahmed, R. Ahshan, A. Al-Durra, M. Valdes, and P. Sutherland, "Detecting Arcing Current Faults in Medium-to-Low Voltage Transformers", *In Proc. of the 60-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2024)*, Las Vegas, NV, May 2024.

C13– S. A. Saleh, E. Ozkop, O. Betancourt, R. Ahshan, E. Zundel, Z. Sanchez, and J.Meng "Voltage Survivability Analysis of Power Systems", *In Proc. of the 58-th IEEE IAS'23 Annual Meeting Conference*, Nashville, TN, October 2023.

C14– S. Saleh "Implementing V/f Control for Induction Motors Fed by Wavelet Modulated Power Electronic Converters", *In Proc. of the 58-th IEEE IAS'23 Annual Meeting Conference*, Nashville, TN, October 2023.

C15– S. A. Saleh "Testing a V/f Control for Permanent Magnet Synchronous Motor Drives with Wavelet Modulated Power Electronic Converters", *In Proc. of the 58-th IEEE IAS'23 Annual Meeting Conference*, Nashville, TN, October 2023.

C16– S. A. Saleh, E. W. Zundel, E. F. S. Hill, G. Y. Morris, S. Brown, J. Meng, and J. Cardenas "Effects of Loading Levels on Harmonic Distortion in Power Transformers Due to GIC Flows", *In Proc. of the 58-th IEEE IAS'23 Annual Meeting Conference*, Nashville, TN, October 2023.

C17– S. A. Saleh, E. W. Zundel, D. Jewett, E. F. S. Hill, J. Meng, G. Y. Morris and S. Brown "Case Studies of Harmonic Distortion in Power Transformers Due to Geomagnetically Induced Current Flow", *In Proc. of the 59-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2023)*, Las Vegas, NV, May 2023.

C18– S. Saleh, M. Valdes, P. Sutherland, M. Haj-Ahmed, and E. W. Zundel "Digital Protection Against Arcing Current Faults on the Secondary Side of a Three Phase Power Transformer", *In Proc. of the 59-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2023)*, Las Vegas, NV, May 2023.

C19– S. A. Saleh, J. Meng, A. Al-Durra, E. Ozkop, M. Valdes, and T. Hill "Impacts of the Sampling Rate on Responses of Digital Protective Relays", *In Proc. of the 59-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2023)*, Las Vegas, NV, May 2023.

C20– S. A. Saleh, A. Al-Durra and S. Kanukollu, "Digital Ground Fault Protection of Grid-Connected Photovoltaic Systems", *In Proc. of the 59-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2023)*, Las Vegas, NV, May 2023.

C21– S. A. Saleh, J. Meng, A. Al-Durra, E. Ozkop, M. Valdes, and T. Hill "Assessment of Sampled-Values Data Quality on Responses of Time-Frequency Based Digital Relays", *In Proc. of the 59-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2023)*, Las Vegas, NV, May 2023.

C22– S. Saleh, M. Valdes, E. Ozkop, A. Yuksel, A. Al-Durra, D. Jewett, J. Meng, and S. Panetta, "Ground Fault Protection in Frequency-Selective Grounded Systems Fed by a Single Transformer", *In Proc. of the 57-th IEEE IAS'22 Annual Meeting Conference*, Detroit, MI, October 2022.

C23– S. Saleh, M. Valdes, R. Ahshan, D. Jewett, C. Mardegan, J. Meng, and S. Panetta, "Ground Fault Protection of Synchronous Generators with Frequency-Selective Grounding", *In Proc. of the 57-th IEEE IAS'22 Annual Meeting Conference*, Detroit, MI, October 2022.

C24– S. A. Saleh, "Balancing Capacitor Voltages in 7-Level Single Phase Flying-Capacitor

Wavelet Modulated Inverters", *In Proc. of the 57-th IEEE IAS'22 Annual Meeting Conference*, Detroit, MI, October 2022.

C25– S. A. Saleh, D. Jewett, A. Al-Durra, S. Panetta, and M. Valdes, "Experimental Testing of Different Grounding System Designs", *In Proc. of the 58-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2022)*, Las Vegas, NV, May 2022.

C26– S. A. Saleh, D. Jewett, A. Al-Durra, S. Kanukollu, J. Cardenas, M. Valdes, and S. Panetta, "Performance Testing of Different Grounding Systems", *In Proc. of the 58-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2022)*, Las Vegas, NV, May 2022.

C27– S. A. Saleh, D. Jewett, and S. Panetta, "Features and Capabilities of Grounding System Designs", *In Proc. of the 58-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2022)*, Las Vegas, NV, May 2022.

C28– S. A. Saleh, "Experimental Testing of the Wavelet Modulation Technique for 3ϕ, 5-Level, PECs", *In Proc. of the 58-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2022)*, Las Vegas, NV, May 2022.

C29– S. A. Saleh, "Developing and Testing the Wavelet Modulation Technique for 3ϕ, 5-Level, PECs", *In Proc. of the 58-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2022)*, Las Vegas, NV, May 2022.

C30– S. A. Saleh, E. Ozkop, R. Ahshan, M. Valdes, and C. Mardegan, "Experimental Performance of the $\alpha\beta 0$-Based Bus Differential Protection", *In Proc. of the 58-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2022)*, Las Vegas, NV, May 2022.

C31– S. A. Saleh, E. Ozkop, K. Muttaqi, A. Rubaai, and B. Nahid-Mobarakeh, "Survivability-Based Protection for 3ϕ Permanent Magnet Synchronous Motor Drives", *In Proc. of the 56-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2022)*, Las Vegas, NV, May 2022.

C32– S. A. Saleh, E. Ozkop, M. Valdes, A. Yuksel, M. Haj-Ahmed, S. G. Sanchez, and C. Mardegan, "Factors Affecting Battery Unit Contributions to Fault Currents in Grid-

connected Battery Storage Systems", *In Proc. of the 56-th IEEE IAS'21 Annual Meeting Conference*, Vancouver, BC, October 2021.

C33– S. A. Saleh and M. R. A. Chowdhury, "Survivability-Based Method for Assessing Impacts of Load-Side Activities on Power Systems", *In Proc. of the 56-th IEEE IAS'21 Annual Meeting Conference*, Vancouver, BC, October 2021.

C34– M. R. A. Chowdhury, S. A. Saleh, O. Betancourt, J. Cardenas-Barrera, and E. Castillo-Guerra, "Employing Battery Storage Systems to Improve Power System Survivability", *In Proc. of the 56-th IEEE IAS'21 Annual Meeting Conference*, Vancouver, BC, October 2021.

C35– S. A. Saleh, R. Ahshan, and M. Haj-Ahmed, "An Assessment Method for Smart Grid Functions in Residential Loads", *In Proc. of the 56-th IEEE IAS'21 Annual Meeting Conference*, Vancouver, BC, October 2021.

C36– S. A. Saleh, E. Ozkop, M. S. Ayas, K. Muttaqi, and B. Nahid-Mobarakeh, "Survivability-Based Protection for 3ϕ Induction Motor Drives", *In Proc. of the 56-th IEEE IAS'21 Annual Meeting Conference*, Vancouver, BC, October 2021.

C37– S. A. Saleh, R. Ahshan, and A. Al-Durra, "Model-Predictive Control to Minimize Ground Potentials in Transformerless Grid-Connected 5-Level Power Electronic Converters", *In Proc. of the 57-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2021)*, Las Vegas, NV, April 2021.

C38– S. A. Saleh, J. L. Cardenas-Barrera, E. Castillo-Guerra, B. Alsayid, and L. Chang, "A Virtual Equivalent Battery-Based Method for Planning Smart Grid Functions for Residential Loads", *In Proc. of the 57-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2021)*, Las Vegas, NV, April 2021.

C39– S. A. Saleh, E. Ozkop, C. Mardegan, and M. E. Valdes, "Bus Differential Protection for Buses Interconnecting Battery Storage Systems", *In Proc. of the 57-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2021)*, Las Vegas, NV, April 2021.

C40– S. A. Saleh, E. Ozkop, and A. Rubaai, "Testing the Frame-Angle-Based Direct Torque Control for 3ϕ Induction Motor Drives", *In Proc. of the 55-th IEEE IAS'20 Annual Meeting Conference*, Detroit, MI, October 2020.

C41– S. A. Saleh, J. L. Cardenas-Barrera, E. Castillo-Guerra, B. Alsayid, and L. Chang, "An Energy-Based Benchmark for Smart Grid Functions in Residential Loads", *In Proc. of the 55-th IEEE IAS'20 Annual Meeting Conference*, Detroit, MI, October 2020.

C42– S. A. Saleh and E. Ozkop, "ANSI 87T-Based Differential Protection of 3ϕ Solid-State Transformers", *In Proc. of the 55-th IEEE IAS'20 Annual Meeting Conference*, Detroit, MI, October 2020.

C43– S. A. Saleh, A. Al-Durra, and R. Ahshan, "Ground Potentials in Transformerless Grid-Connected Multi-Level Power Electronic Converters", *In Proc. of the 56-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2020)*, Las Vegas, NV, April 2020.

C44– X. F. St. Onge and S. A. Saleh, "Split-DC Bus for PMG-based WECSs with Battery Storage Units", *In Proc. of the 56-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2020)*, Las Vegas, NV, April 2020.

C45– A. Betancourt, Z. G. Sanchez. S. A. Saleh, E. F. Hill, X. Zhao and F. P. Sanchez, "Battery Energy Storage Systems for Primary Frequency Regulation in Isolated Power Systems", *In Proc. of the 56-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2020)*, Las Vegas, NV, April 2020.

C46– S. A. Saleh, E. Ozkop, R. J. Meng, Z. G. Sanchez, and A. A. Oslani-Antonio, "The Selection of Locations and Sizes of Battery Storage Systems Using the Principle Component Analysis and Center-of-Inertia", *In Proc. of the 54-th IEEE IAS'19 Annual Meeting Conference*, Baltimore, MD, October 2019.

C47– S. A. Saleh, X. F. St. Onge, C. Richard, and E. Ozkop, "$dq0$ PHT-Based Digital Differential Protection for 3ϕ Converter Transformers", *In Proc. of the 54-th IEEE IAS'19 Annual Meeting Conference*, Baltimore, MD, October 2019.

C48– S. A. Saleh, E. Castillo-Guerra, E. Ozkop, P. Pijnenburg, "Unit Commitment-Based Control of Bus-Split Aggregated Electric Water Heaters", *In Proc. of the 54-th IEEE IAS'19 Annual Meeting Conference*, Baltimore, MD, October 2019.

C49– X. Gong, E. Castillo-Guerra, J. L. Cardenas-Barrera, B. Cao, L. Chang and S. A. Saleh, "A Generic Load Forecasting Method for Aggregated Thermostatically Con-

trolled Loads Based on Convolutional Neural Networks", *In Proc. of the IEEE Energy Conversion Congress and Exposition (ECCE'19)*, Baltimore, MD, September 2019.

C50– S. A. Saleh, J. Wo, X. F. St. Onge, and E. Castillo-Guerra, "Estimating Frequency Changes Due to Smart Grid Functions", *In Proc. of the 55-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2019)*, Calgary, AB, May 2019.

C51– S. A. Saleh, M. E. Valdes, C. Mardegan, and B. Alsayid, "State-of-the-Art Methods for Detecting and Identifying Arcing Current Faults", *In Proc. of the 55-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2019)*, Calgary, AB, May 2019.

C52– S. A. Saleh, X. F. St. Onge, C. Richard, K. McDonald, E. Ozkop, and S. Panetta, "Frequency-Selective Grounding for 3ϕ Power Transformers", *In Proc. of the 55-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2019)*, Calgary, AB, May 2019.

C53– S. A. Saleh, C. Richard, X. F. St. Onge, K. McDonald, E. Ozkop, L. Chang, and B. Alsayid, "Solid-State Transformers for Distribution Systems: Technology, Performance, and Challenges", *In Proc. of the 55-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2019)*, Calgary, AB, May 2019.

C54– X. Gong, J. L. Cardenas Barrera, L. Chang, E. Castillo Guerra, B. Cao, and S. A. Saleh, "Integrated Multi-Horizon Power and Energy Forecast for Aggregated Electric Water Heaters", *In Proc. of the IEEE Energy Conversion Congress and Exposition (ECCE'18)*, Portland, OR, September 2018.

C55– H. Mohomad, S. A. Saleh, R. Shao and L. Chang, "Dead-Beat Current Controller for Voltage Source Inverter with LCL Grid-Tied Filter", *In Proc. of the IEEE Energy Conversion Congress and Exposition (ECCE'18)*, Portland, OR, September 2018.

C56– S. A. Saleh, C. Richard, X. F. St. Onge, J. Meng, and E. Castillo-Guerra, "On the Comparison Between the Protection Coordination and Digital Modular Protection for Grid-Connected Battery Storage Systems", *In proc. of the 53-rd IEEE IAS'18 Annual Meeting Conference*, Portland, OR, September 2018.

C57– S. A. Saleh and A. Rubaai, "The Performance of the Frame-Angle-Based Direct Torque Controller for PMSM Drives at Low and Very Low Speeds", *In proc. of the 53-rd IEEE IAS'18 Annual Meeting Conference*, Portland, OR, September 2018.

C58– S. A. Saleh, "Unit Commitment Based Controller for Grid-Connected PMG-Based WECSs with Battery Storage Units", *In proc. of the 53-rd IEEE IAS'18 Annual Meeting Conference*, Portland, OR, September 2018.

C59– X. F. St. Onge, C. Richard, K. McDonald, and S. A. Saleh, "Performance Evaluation of an Isolated DC-DC Converter with Discontinuous Supply", *In proc. of the 53-rd IEEE IAS'18 Annual Meeting Conference*, Portland, OR, September 2018.

C60– S. Saleh, X. F. St. Onge, C. Richard, E. Ozkop, K. McDonald, and S. Panetta, "Impacts of Grounding and Winding Configurations on Voltage Harmonics in 3ϕ Power Transformers", *In Proc. of the 54-rd IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2018)*, Niagara Falls, ON, May 2018.

C61– X. F. St. Onge, K. McDonald, C. Richard, and S. A. Saleh, "A New Multi-Port Active DC-Link for PMG-Based WECSs", *In Proc. of the 54-rd IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2018)*, Niagara Falls, ON, May 2018.

C62– S. A. Saleh, "Frame-Angle-Based Controller for 3ϕ Interconnected PV Systems", *In Proc. of the 54-rd IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2018)*, Niagara Falls, ON, May 2018.

C63– S. A. Saleh, "The Wavelet Modulation Technique for 1ϕ CHB Multi-Level DC-AC Power Electronic Converters", *In proc. of the 52-nd IEEE IAS'17 Annual Meeting Conference*, Cincinnati, OH, October 2017.

C64– S. A. Saleh and A. Rubaai, "Frame-Angle-Based Direct Torque Controller for PMSM Drives", *In proc. of the 52-nd IEEE IAS'17 Annual Meeting Conference*, Cincinnati, OH, October 2017.

C65– S. A. Saleh, "The Formulation and Testing of Extended DQPF Method for Unbalanced 3ϕ Systems", *In proc. of the 52-nd IEEE IAS'17 Annual Meeting Conference*, Cincinnati, OH, October 2017.

C66– S. A. Saleh, P. Pijnenburg, E. Castillo-Guerra, L. Chang, "The Application of Bus-Split Method for Aggregating Distributed Generation Units", *In proc. of the 52-nd IEEE IAS'17 Annual Meeting Conference*, Cincinnati, OH, October 2017.

C67– S. A. Saleh, A. A. Aldik, and E. Castillo-Guerra, "Distributed Energy Storage Unit-Based Active Demand Response for Residential Loads", *In proc. of the 52-nd IEEE IAS'17 Annual Meeting Conference*, Cincinnati, OH, October 2017.

C68– S. A. Saleh, R. McSheffery, and R. Meng "A New Digital Protection for Grid-Connected Battery Storage Systems", *In proc. of the 52-nd IEEE IAS'17 Annual Meeting Conference*, Cincinnati, OH, October 2017.

C69– H. Mohomad, S. A. Saleh, and L. Chang, "Disturbance-Estimator Predictive Current Controller for 1ϕ Interconnected PV Systems", *In Proc. of the 53-rd IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2017)*, Niagara Falls, ON, May 2017.

C70– R. H. Mohomad, S. A. Saleh, R. Shao and L. Chang, "Robust Current Controller for Grid-Connected 1ϕ Voltage Source Inverter", *In Proc. of the 8-th International Symposium on Power Electronics for Distributed Generation Systems (PEDG'17)*, Florianopolis, Brazil, April 2017.

C71– R. H. Mohomad, S. A. Saleh, L. Chang, R. Shao and S. Xu, "Observer-Based Predictive Current Controller for Grid-Connected Single-Phase Wind Converter", *In Proc. of the 32-nd IEEE Applied Power Electronics Conference and Exposition (APEC'17)*, Tampa, FL, May 2017.

C72– S. A. Saleh, R. Meng, and R. McSheffery, "Digital Modular Protection for Grid-Connected PMG-Based WECSs with Battery Storage Systems", *In Proc. of the 53-rd IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2017)*, Niagara Falls, ON, May 2017.

C73– S. A. Saleh, R. McSheffery, S. Buck and R. Meng, "Power Controller for PMG-Based WECSs with Battery Storage Systems", *In Proc. of the 53-rd IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2017)*, Niagara Falls, ON, May 2017.

C74– S. A. Saleh, X. F. St. Onge, J. D. McLeod, and W. M. McGivney, "The Experimental Performance of A Multi-Level AC-DC Power Electronic Converter for PMG-Based WECSs", *In Proc. of the 53-rd IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2017)*, Niagara Falls, ON, May 2017.

C75– S. A. Saleh, X. F. St. Onge, W. M. McGivney, and J. D. McLeod, "A New Multi-Level AC-DC Power Electronic Converter for Applications in PMG-Based WECSs", *In Proc. of the 53-rd IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2017)*, Niagara Falls, ON, May 2017.

C76– P. Pijnenburg and S. A. Saleh, "The Bus-Split Method for Residential Load Aggregation", *In Proc. of the 53-rd IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2017)*, Niagara Falls, ON, May 2017.

C77– S. A. Saleh, "Resolution-Level MPPT Controller for PMG-Based Wind Energy Conversion Systems", *In Proc. of the 51-th IEEE IAS'16 Annual Meeting Conference*, Portland, OR, October 2016.

C78– S. A. Saleh,P. Pijnenburg, and E. Castillo-Guerra, "Load Aggregation From Generation Follows Load to Load Follows Generation", *In Proc. of the 51-th IEEE IAS'16 Annual Meeting Conference*, Portland, OR, October 2016.

C79– S. A. Saleh, "The Development of a Power Flow-Based Controller for Micro-Grid Systems", *In Proc. of the 51-th IEEE IAS'16 Annual Meeting Conference*, Portland, OR, October 2016.

C80– S. A. Saleh, R. Meng, R. McSheffery, S. Buck and E. Ozkop, "A New Interconnection Protection for Co-Generation Systems", *In Proc. of the 51-th IEEE IAS'16 Annual Meeting Conference*, Portland, OR, October 2016.

C81– S. A. Saleh, R. Meng, and J. Meng, "Developing and Testing a Digital Interconnection Protection for Grid-Connected WECSs", *In Proc. of the 52-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2016)*, Detroit, MI, May 2016.

C82– S. A. Saleh, E. Ozkop, and A. S. Aljankawey, "The Development and Testing of a Coordinated Anti-Islanding Protection for Collector Systems with Multiple Distributed

Generation Units", *In Proc. of the 52-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2016)*, Detroit, MI, May 2016.

C83– S. A. Saleh, "The Development and Formulation of a Power Flow Using $d-q$ Reference Frame Components", *In Proc. of the 52-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2016)*, Detroit, MI, May 2016.

C84– P. Pijnenburg, S. A. Saleh, and P. R. McGaw, "Performance Evaluation of the ZIP Model-Phaselet Frame Approach for Identifying Appliances in Residential Loads", *In Proc. of the 50-th IEEE IAS'15 Annual Meeting Conference*, Dallas, TX, October 2015.

C85– S. A. Saleh, B. Allen, R. Meng, T. Lavigne, and B. G. Colpitts, "On the Employment of 1ϕ, Voltage-Source, PWM Inverters in Dielectric Barrier Discharge Devices for Producing Plasma-Generated Body Forces", *In Proc. of the 50-th IEEE IAS'15 Annual Meeting Conference*, Dallas, TX, October 2015.

C86– S. A. Saleh, "Determining the Reactive Power from the Active Power in Single Phase Systems Using the Extended Newton-Phaselet Method", *In Proc. of the 50-th IEEE IAS'15 Annual Meeting Conference*, Dallas, TX, October 2015.

C87– S. A. Saleh, E. Ozkop, A. S. Aljankawey, L. Chang, "'Developing and Testing Phaselet Frames-Based Digital Protection For Distributed Generation Units", *In Proc. of the 50-th IEEE IAS'15 Annual Meeting Conference*, Dallas, TX, October 2015.

C88– S. A. Saleh, A. S. Aljankawey, R. Errouissi, E. Castillo-Guerra, and M. A. Rahman, "Experimental Performance of the Phase-Based Digital Protection Against Arc Flash Faults", *In Proc. of the 50-th IEEE IAS'15 Annual Meeting Conference*, Dallas, TX, October 2015.

C89– S. A. Saleh, A. S. Aljankawey, R. Errouissi, and E. Castillo-Guerra, "Extracting the Phase of Fault Currents: A New Approach for Identifying Arc Flash Faults", *In Proc. of the 51-th IEEE IAS Industrial and Commercial Power Systems Technical Conference (ICPS 2015)*, Calgary, AB, May 2015.

C90– S. A. Saleh, A. S. Aljankawey, R. Meng, J. Meng, C. P. Diduch, and L. Chang, "Impacts of Grounding Configurations on Responses of Ground Protective Relays for DFIG-Based WECSs-Part II: High Impedance Faults", *In Proc. of the 51-th IEEE IAS Industrial*

and Commercial Power Systems Technical Conference (ICPS 2015), Calgary, AB, May 2015.

C91– S. A. Saleh, A. S. Aljankawey, R. Meng, and J. Meng, "Instantaneous Apparent Power-Based Anti-Islanding for Distributed Co-Generation Systems", *In Proc. of the 49th IEEE IAS Annual Meeting Conference*, Vancouver, BC, October 2014.

C92– S. A. Saleh, A. S. Aljankawey, M. A. Khaizaran and B. A. Sayed, "Influence of Power Electronic Converters on Current-Voltage Behaviors During Faults in DGUs-Part I: Wind Energy Conversion Systems", *In Proc. of the 49th IEEE IAS Annual Meeting Conference*, Vancouver, BC, October 2014.

C93– S. A. Saleh, A. S. Aljankawey, B. A. Sayed and M. A. Khaizaran, "Influence of Power Electronic Converters on Current-Voltage Behaviors During Faults in DGUs-Part II: Photovoltaic Systems", *In Proc. of the 49th IEEE IAS Annual Meeting Conference*, Vancouver, BC, October 2014.

C94– S. A. Saleh, A. S. Aljankawey, R. Meng, and J. Meng, "Impacts of Grounding Configurations on Responses of Ground Protective Relays for DFIG-Based WECSs", *In Proc. of the 50th IEEE IAS Industrial & Commercial Power Systems (ICPS) Conference*, Fort Worth, TX, May 2014.

C95– S. A. Saleh, D. M. Arbolaez, E. C. Guerra, and J. Meng, "Real-Time Testing of Newton-Phaselet Method for Calculating the Power Factor of Single Phase Loads," *In Proc. of the 48th IEEE IAS'13 Annual Meeting Conference*, Orlando, FL, October 2013.

C96– S. A. Saleh, R. Ahshan and M. A. Rahman, "Embedded Digital Protection for IPMSM Drives," *In Proc. of the 48th IEEE IAS'13 Annual Meeting Conference*, Orlando, FL, October 2013.

C97– S. A. Saleh, "Resolution-Level Control of 3ϕ VS WM AC-DC Converters," *In Proc. of the 47th IEEE IAS'11 Annual Meeting Conference*, Las Vegas, NV, October 2012.

C98– S. A. Saleh, "Multi-Relay Protection for Micro-Grid Systems," *In Proc. of the 47th IEEE IAS'11 Annual Meeting Conference*, Las Vegas, NV, October 2012.

C99– S. A. Saleh and M. A. Rahman, "The Analysis and Development of Controlled 3ϕ Wavelet Modulated AC-DC Converters," *In Proc. of the IEEE International Conference on Power Electronics, Drives and Energy Systems 2012 (PEDES 2012)*, Bengaluru, India, December 2012.

C100– S. A. Saleh, R. Ahshan, M. A. Rahman, M. A. Khaizaran and B. A. Sayed, "Implementing and Testing $d-q$ WPT-Based Digital Protection for Micro-Grid Systems", *In Proc. of the 46th IEEE IAS'11 Annual Meeting Conference*, Orlando, FL, October 2011.

C101– S. A. Saleh, "On Performances of Wavelet Modulated Three Phase AC-DC Converters", *In Proc. of the 46th IEEE IAS'11 Annual Meeting Conference*, Orlando, FL, October 2011.

C102– S. A. Saleh and R. Ahshan, "Resolution-Level Controlled Wind Energy Conversion System for PM Generators", *In Proc. of the 46th IEEE IAS'11 Annual Meeting Conference*, Orlando, FL, October 2011.

C103– S. A. Saleh, H. M. Zubayer, T. Iqbal, M. A. S. K. Khan, and M. A. Rahman, "Design and Performance of a Double-Layered Interior Permanent Magnet Generator ", *The IEEE International Electric Machines and Drives Conference (IEMDC) 2011 Conference Proceedings*, Niagara Falls, Ontario, Canada, pp. 1522–1527, May 2011.

C104– S. A. Saleh and C. R. Moloney, "Development and Testing of Wavelet Packet Transform-Based Detector For Ice Accretion on Wind Turbines", *The IEEE 14th Digital Signal Processing Workshop DSP06 Conference Proceedings*, Enchantment Resort, Sedona, Arizona, USA, January, 2011.

C105– S. A. Saleh and M. A. Rahman, "A New Implementation Method of Wavelet Packet Transform Differential Protection for Power Transformers", *The 45th IEEE IAS10 Annual Meeting Conference Proceedings*, Houston, TX, October 2010.

C106– M. A. S. K. Khan S. A. Saleh and M. A. Rahman, "Generation and Harmonics in Interior Permanent Magnet Wind Generator", *IEEE International Electric Machines and Drives Conference IEMDC'09*, Miami, Florida, May 2009, pp.17–23.

C107– S. A. Saleh and M. A. Rahman, "Performance Testing of a Single-Phase Voltage-Source Wavelet Modulated AC-DC Converter", *IEEE Canadian Conference on Electrical and Computer Engineering CCECE'09*, St. John's, NL, May 2009, pp.1049–1054.

C108– S. A. Saleh and M. A. Rahman, "The Development and Testing of a Scalar Double-Loop Controller for a 3ϕ WM Inverter-Fed IPM Motor", In Proc. of the IEEE PES General Meeting, Calgary,AB, July 2009.

C109– S. A. Saleh and M. A. Rahman, "Performance Testing of a 2 Loop RLC WM Inverter-Fed Induction Motor Drive", *The 10th International Conference on Control, Automation, Robotics and Vision ICARCV 2008*, December 2008, Hanoi, Vietnam, pp.1265–1270.

C110– S. A. Saleh and M. A. Rahman, "Analysis and Development of a Resolution-Level Vector-Controlled WM Inverter-Fed IPM Motor Drive", *The 43rd IEEE IAS'08 Annual Meeting Conference Proceedings*, Edmonton, Alberta, October 2008.

C111– S. A. Saleh and M. A. Rahman, "The Development and Testing of a Double-Loop Resolution-Level Controller for a 3-phase WM Inverter-Fed Induction Motor", *IEEE PES Annual Meeting Conference Proceedings*, Pittsburgh, Pennsylvania, July 2008.

C112– S. A. Saleh and M. A. Rahman, "Testing the Performance of a 3ϕ VS WM Inverter in a PM Generator-Based Wind Turbine System", *IEEE IEEE Newfoundland Electrical and Computer Engineering Conference (NECEC)*, St. John's, NL, November 2008.

C113– S. A. Saleh and M. A. Rahman, "Development and Experimental Testing of a Three Phase Resolution-Level Controlled WM Inverter-Fed Induction Motor", *The 42nd IEEE IAS07 Annual Meeting Conference Proceedings*, September 2007, New Orleans, Louisiana, pp.1249–1256.

C114– S. A. Saleh and M. A. Rahman, "Real-Time Performance Testing of a 3ϕ VS WM Inverter-Fed IPM Motor", *The 38th IEEE PESC 2007 Proceedings*, Orlando, Florida, 2007, pp.437–442.

C115– S. A. Saleh and M. A. Rahman, "Real-Time Performance Testing of a 3ϕ VS WM Inverter-Fed Induction Motor", *2007 European Power Electronics Conference Proceedings*, Aalborg, Denmark, September 2007

C116– S. A. Saleh and M. A. Rahman, "Real-Time Implementation and Testing of a Wavelet-Controlled Dynamic Voltage Restorer", *The 41st IEEE IAS06 Annual Meeting Conference Proceedings*, Tampa, FL. October. 2006, Vol. 2 , pp.733–740.

C117– S. A. Saleh, C. R. Moloney and M. A. Rahman, "Developing a Non-dyadic MRAS for Switching DC-AC Inverters", *The IEEE 12th Digital Signal Processing Workshop DSP06 Conference Proceedings*, Jackson Lake Lodge, Wyoming, USA, September, 2006, pp.544–549.

C118– S. A. Saleh and M. A. Rahman, "Development and Experimental Testing of a Single-Phase B-Spline-Based SPWM Inverter", *IEEE ISIE'06 Conference Proceedings*, Montreal, Quebec, July 2006, pp.815–819.

C119– S. A. Saleh and M. A. Rahman, "Experimental Testing of a Novel Control for Inverter-Fed Three-Phase Induction Motor", *IEEE PES06 Conference Proceedings*, Montreal, Quebec, June 2006.

C120– S. A. Saleh and M. A. Rahman, "Discrete Time-Based Mathematical Model of the SPWM Technique", *IEEE IECON05 Conference Proceedings*, Raleigh, NC. November 2005, pp.1082–1087.

C121– S. A. Saleh and M. A. Rahman, "Analog-Filter Implementation of the Wavelet-Based Differential Protection of 3ϕ Power Transformers in Harsh Environments", *In Proc. of the IEEE NECEC Conference*, St. John's, NL, November 2005 (*Winner of the IEEE NECEC T. David Collett Best Industry Paper Award 2005*).

C122– S. A. Saleh and M. A. Rahman, "Testing of a Wavelet Packet Transform-Based Differential Protection for Resistance-Grounded Three-Phase Transformers", *The 40th IEEE IAS05 Annual Meeting Conference Proceedings*, Hong Kong, October 2005, Vol. 2 , pp.852–859.

C123– S. A. Saleh, A. M. Khan and M. A. Rahman, "Application of a Wavelet-Based MRA for Diagnosing Disturbances in a Three-Phase Induction Motor", *The 6th IEEE International Symposium on Diagnostics for Electric Machines, Power Electronics and Drives Conference Proceedings*, Vienna, Austria, September 2005.

C124– S. A. Saleh and M. A. Rahman, "Innovative Power System Transient Disturbance Detection and Classification Using Wavelet Analysis", *The 3rd CECE 2004 Conference Proceedings*, Dhaka, Bangladesh, December 2004.

C125– S. A. Saleh and M. A. Rahman, "Wavelet-Based Dynamic Voltage Restorer for Power Quality Improvement", *The 35th IEEE PESC 2004 Conference Proceedings*, Aachen, Germany, 2004, Vol. 4, pp.3152–3156.

C126– S. A. Saleh and M. A. Rahman, "Wavelet-Based Differential Protection of 3ϕ Power Transformers", *In Proc. of the IEEE NECEC Conference*, St. John's, NL, November 2004 (*Winner of the Best Paper Award*).

C127– S. A. Saleh and M. A. Rahman, "Wavelet-Based Diagnostics and Protection of Power Transformers", *The 4th IEEE International Symposium on Diagnostics for Electric Machines, Power Electronics and Drives Conference Proceedings*, Atlanta GA. August 2003, pp.136–141.

C128– S. A. Saleh and M. A. Rahman, "Off-line Testing of a Wavelet Packet-Based Algorithm for Discriminating Inrush Current in Three-Phase Power Transformers", *IEEE LESCOPE03 Conference Proceedings*, Montreal, Quebec, May 2003, pp.36–41.

C129– S. A. Saleh and M. A. Rahman, "Transient Model of Power Transformer Using Wavelet Filter Bank", *IEEE LESCOPE03 Conference Proceedings*, Halifax, NS, June 2002, pp.47–54.

Books

1. S. A. Saleh and M. A. Rahman, *An Introduction to Wavelet Modulated Inverters*, Wiley-IEEE Press, John Wiley & Sons, Inc., New Jersey, January 2011.

IEEE Standards

S1– Working Group Member, "IEEE Std 3003.1-2019: IEEE Recommended Practice for System Grounding of Industrial and Commercial Power Systems", *IEEE SA Standards Board*, August 2019.

S2– Vice Chair of the working group, "IEEE Std 3003.2-2023: IEEE Recommended Practice for Equipment Grounding and Bonding in Industrial and Commercial Power Systems", *IEEE SA Standards Board*, 2023.

S3– Vice chair of the working group, "IEEE Std 3003.5-2022: IEEE Recommended Practice for the Grounding Used in Industrial and Commercial Power Systems", *IEEE SA Standards Board*, October 2022.

S4– Chair of the working group, "IEEE Std 3004.9-2023: IEEE Recommended Practice for the Protection of Power Transformers Used in Industrial and Commercial Power Systems", *IEEE SA Standards Board*, 2023.

S5– Working Group Member, "IEEE Std 3004.8-2023: IEEE Recommended Practice for the Protection of Electric Motor Drives Used in Industrial and Commercial Power Systems", *IEEE SA Standards Board*, 2023.

Industrial Technical Reports

TR1– S. A. Saleh and M. A. Rahman (2007), "Digital Differential Protection of Power Transformers in Harsh Environments", *Newfoundland Hydro Inc.*, St. John's, Newfoundland, Canada.

TR2– S. A. Saleh and R. Wang (2008), "Wavelet Modulated Inverters for Fractional HP PMSM Drives", *Balck&Decker.*, Baltimore, Maryland, USA.

TR3– S. A. Saleh, T. Iqbal, and M. A. Rahman (2010), "Protection, Operation, and Grounding of Wind Farms: Case Study Fermuze Wind Farm", *Newfoundland Hydro Inc.*, St. John's, Newfoundland, Canada.

TR4– S. A. Saleh, (2011), "π-Skew Double Layer Permanent Magnet Machine: A new Generator for Submersible Ocean Energy Units", *Newfoundland Department of Energy and Natural Sources.*, St. John's, Newfoundland, Canada.

TR5– S. A. Saleh, (2013), "Wavelet Modulated Power Converters for Induction Motor Drives", *Agile Technologies Inc.*, St. John's, Newfoundland, Canada.

TR6– S. A. Saleh, A. S. Aljankawey, L. Chang, C. Diduch (2014), "Anti-Islanding Protection of Grid-connected Wind Generating Units", *New Brunswick Power.*, Fredericton, New Brunswick, Canada.

TR7– S. A. Saleh (2014), "Wavelet Modulated Power Converters for Motor Drives", *Libra Innovation Inc.*, Edmundston, New Brunswick, Canada.

TR8– S. A. Saleh, J. Meng, and E. C. Guerra (2015), "Disaggregation of Home Power Meter Data", *Siemens Canada.*, Fredericton, New Brunswick, Canada.

TR9– S. A. Saleh, J. Meng, J. Cardenas, and E. C. Guerra (2015), "Peak-Demand Management", *St. John Energy.*, St. John, New Brunswick, Canada.

TR10– S. A. Saleh, J. Meng, and L. Chang (2016), "Wavelet Modulated Grid-Connected Battery Storage Units: Design and Prototyping", *St. John Energy.*, St. John, New Brunswick, Canada.

TR11– S. A. Saleh, J. Meng, and L. Chang (2016), "Wavelet Modulated Grid-Connected Battery Storage Units: Operation, Control, and Protection", *St. John Energy and Malta.*, St. John, New Brunswick, Canada.

TR12– S. A. Saleh, J. Meng, and B. Cao (2016), "Grounding Upgrade for Wind Farms: Case Study North-Cape Wind-Farm ", *Wind Energy Institute of Canada.*, North Cape, Prince Edward Island, Canada.

TR13– S. A. Saleh, X. St. Onge (2016), "Grounding Upgrade for Power Transformers: Case Study Irving Petrochemical Plant", *Irving Oil Inc.*, St. John. New Brunswick, Canada.

TR14– S. A. Saleh, E. Hill, L. Chang, and C. Diduch (2017), "Reliability Studies of Power Systems with 100% Renewable Generation", *Barbados Light & Power Inc.*, St. Michael, Barbados.

TR15– S. A. Saleh, E. Hill, L. Chang, and C. Diduch (2017), "Devising a Plan for Retiring Thermal Generating Units: Towards 100% Renewable Generation", *Barbados Light & Power Inc.*, St. Michael, Barbados.

TR16– S. A. Saleh, E. Hill, L. Chang, and C. Diduch (2018), "Sizing and Allocating Grid-Connected Battery Storage Units", *Barbados Light & Power Inc.*, St. Michael, Barbados.

TR17– S. A. Saleh, E. Hill, L. Chang, and C. Diduch (2020), "Grounding Design and Protection for Power Systems with 100% Renewable Generation", *Barbados Light & Power Inc.*, St. Michael, Barbados.

TR18– S. A. Saleh, J. Cardenas, and E. C. Guerra (2021), "Improving Power Quality Using Grid-Connected Battery Storage Units", *St. John Energy.*, St. John, New Brunswick, Canada.

TR19– S. A. Saleh, E. Hill, D. Jwett, and E. Zundel (2022), "Grounding System Design with GIC Blocking", *New Brunswick Power.*, Fredericton, New Brunswick, Canada.

TR20– S. A. Saleh, E. Hill, J. Meng, and E. Zundel (2023), "Grounding Systems for High Distributed PV Integration", *EMERA Inc.*, Halifax, Nova Scotia, Canada.

TR21– S. A. Saleh, E. Hill, J. Meng, and E. Zundel (2024), "Analysis of GIC Impacts on Power Transformers", *New Brunswick Power.*, Fredericton, New Brunswick, Canada.

Research Funding

- 2008-2010: NSERC Strategic Grant:**''Design and Development of Interior Permanent Magnet Wind Generator Systems"**, $75,000/year.
- 2011-2013: New Brunswick Innovation Fund (NBIF), Strategic Projects:**''Digital Multi Relay Protection Systems"**, $36,000/year.
- 2011-2012: University of New Brunswick Start-up Fund, $10,000.
- 2013-2018: NSERC Discovery Grant:**''Applications and Control of Wavelet Modulated Power Electronic Converters"**, $65,000/year.
- 2014-2014: NESRC Engage Grant (Collaboration with Siemens Canada): **''Modeling of Residential Loads for Smart Grid Applications"**: $25,000.
- 2015-2018: ACOA Funding (Collaboration with Siemens Canada and NB Power):**''Smart Grid Living-Laboratory"**, $275,000/year.
- 2015-2020: NSERC CRD:**''Impacts of Smart Grid Functions on Power System Operation"**, $500,000/year.
- 2015-2020: NSERC Strategic Network (NEST):**''Energy Storage Systems"**, $90,000/year.
- 2017-2022: AIF Grant:**''Integrated DER Solutions for Smart Grids"**, $625,000/year.

- 2018-2023: NSERC Discovery Grant:**''The Operation and Control of Solid-State Transformers for Smart Grid Applications"**, $90,000/year.
- 2022-2024: CFI Grant:**''Real-Time Simulator for Power Systems"**, $200,000.

Patents

1. S. Saleh and M. A. Rahman, *Protective Control Method and Apparatus for Power Devices*, US Patent Number US 20040264094A1.
2. S. Saleh, C. R. Moloney, and M. A. Rahman, *Wavelet Modulation Technique for Three Phase Voltage Source Inverters*, Patent Numbers CA 2741148 and US 9106157B2.
3. S. Saleh, D. Noseworthy and C. Batten, *Skewed Dual Layer Permanent Magnet Machine*, (Under Review), August 2019.
4. S. Saleh, E. Zundel and J.Meng, *Second Harmonic-Based GIC Protection System*, (In progress), June 2024.

Memberships

1. 2003-present: Senior Member of the Institute of Electrical and Electronics Engineers (IEEE).
2. 2008-present: Member of the IEEE Industrial Electronics Society (IEEE IES).
3. 2008-present: Member of the IEEE Power Electronics Society (IEEE PELS).
4. 2008-present: Member of the IEEE Industry Application Society (IEEE IAS).
5. 2005-2011: Registered Professional Engineer (P.Eng.) in Newfoundland and Labrador.
6. 2011-Present: Registered Professional Engineer (P.Eng.) in New Brunswick.

SECTION 6: SERVICE

1. 2023-: Secretary of the I&CPS Department, IEEE Industry Application Society.

2. 2022-2023: Co-Chair of the 59^{rd} IEEE IAS Industrial and Commercial Power System Technical Conference (IEEE IAS I&CPS), May 2023.

3. 2021-2022: Co-Chair of the 58^{rd} IEEE IAS Industrial and Commercial Power System Technical Conference (IEEE IAS I&CPS), Las Vegas, NV, May 2022.

4. 2020: Director of Graduate Studies, Department of Electrical and Computer Engineering, The University of New Brunswick.

5. 2019-2021: Vice-Chair of the Industrial Automation and Control Committee, IEEE Industry Application Society.

6. 2021-2023 Technical Committee Paper Review Chair for Industrial Automation and Control Committee, IEEE Industry Application Society.

7. 2017-2021 Chair of the Power System Protection Committee, IEEE Industry Application Society.

8. 2017-2012 Technical Committee Paper Review Chair for Power System Protection Committee, IEEE Industry Application Society.

9. 2017-2021 Treasurer of the IEEE New Brunswick Section.

10. 2017: Chair of the Committee for the IEEE Standard 3004.9: Recommended Practice for the Protection of Power Transformers Used in Industrial and Commercial Power Systems.

11. 2019: Vice-Chair of the Committee for the IEEE Standard 3003.5: Recommended Practice for the Grounding Used in Industrial and Commercial Power Systems.

12. 2018-2019 Co-Chair of the 54^{rd} IEEE IAS Industrial and Commercial Power System Technical Conference (IEEE IAS I&CPS), Niagara Falls, May 2018.

13. 2017-2018 Co-Chair of the 53^{rd} IEEE IAS Industrial and Commercial Power System Technical Conference (IEEE IAS I&CPS), Niagara Falls, May 2017.

14. 2015: Publication Chair of the 2015 IEEE Energy Conversion Congress and Exposition (ECCE 2015), Montreal, September 2015.

15. 2015-Present: Associate Editor for the IEEE Transactions on Industry Application.
16. 2021-Present: Associate Editor for the IEEE Open Journal on Industry Application.
17. 2015-2018: Associate Editor for the IEEE Transactions on Power Electronics.
18. 2015-2018: Member of to the Senate Undergraduate Scholarships Committee, The University of New Brunswick.
19. 2014-2020: Member of the Graduate Committee, Department of Electrical and Computer Engineering, The University of New Brunswick.
20. 2012-2020: Member of the curriculum Committee, Department of Electrical and Computer Engineering, The University of New Brunswick.
21. 2017-Present: Reviewer for NSERC grant applications.
22. 2009: Member of the executive committee of IEEE International Electric Machines and Drives Conference (IEMDC 2011), Niagara Falls, Ontario.
23. 2005-Present: Reviewer for IEEE Transactions on Power Delivery, Energy Conversion, Industrial Electronics and Industry Applications, and different IEEE conferences.

SECTION 7: OTHER RELEVANT INFORMATION

Collaborative Research

1. Collaborative research with Stanley Black & Decker: Real-time implementation and testing of intelligent controllers for fractional horse-power IPM motors.
2. Collaborative research with Newfoundland Hydro: Developing and testing stand-alone differential protective relays.
3. Collaborative research with Newfoundland Hydro: Design, installation and testing of high power rated IPM wind turbines.
4. Collaborative research with HFHG Consulting Inc.: Mirmachi wind farm project.
5. Collaborative research with Siemens Canada: Smart grids.

6. Collaborative research with NB Power: Smart grids and voltage restoration.
7. Collaborative research with EMERA Inc.: Power Systems with 100% Renewable.
8. Collaborative research with Naveco Inc.: Permanent magnet generator-based wind energy conversion systems..
9. Collaborative research with Libra Innovation: New designs of electric motors for electric and hybrid vehicles.
10. Collaborative research with NB Power: GIC Modeling and Protection.
11. Collaborative research with I-Gard: Frequency-Selective Grounding.

Invited Presentations

1. Solid-State Transformers: A New Tool for Demand Response, Abu Dhabi, UAE, June 2022.
2. Signal Processing Methods in Power System Protection: A Tale of Challenges and Reliability, Invited keynote presentation, IEEE JEEIT Conference, Amman, Jordan, November 2021.
3. Solid-State Power Transformers and the Future Distribution Systems, Karadiz Technical University, Trabzon, Turkey, April 2019.
4. Power System Engineering: Facts & Fun, Universidad Mayor de San Andres, La Paz, Bolivia, June 2018.
5. Wavelet Modulated Power Converters for Motor Drives: Karadiz Technical University, Trabzon, Turkey, May 2016
6. Wavelet Modulation Technique: Advancing 3ϕ Power Electronic Converters, IEEE IAS Lecture Series, University of York, Toronto, Ontario, March 2013.
7. Multi-Layered Interior Permanent Magnet Machines: Candidates for High Power Ocean Current Energy Generation, The Department of Natural Resources, Provincial Government of Newfoundland and Labrador, St. John's, NL, March 2012.

8. Resolution-Level Controlled Wind Energy Conversion Systems, The University of Warwick, Coventry, UK, January 2012.

9. Wavelet Modulation Technique: Advancing Power Electronic Inverters, Invited keynote presentation, IEEE IMEDC 2011, Niagara Falls, Ontario, May 2011.

10. WPT-based Disturbance Detection & Classification tool in Micro Grids and Power Systems, ABB AB, Substation Automation Products, Corporate Research, V*ästerås*, Sweden, April, 2011.

11. Digital Protection for Micro-Grid Power Systems, University of Western Ontario, London, Ontario, December 2010.

12. Wavelet Modulated Inverters: Potential Candidates in High Performance Motor Drives, Stanley Black & Decker, Towson, MD, USA November 2010.

13. The Dynamic Capacity Design and Control Approach: Future Micro-Grids, NALCOR, Inc., St. John's, NL, July 2009.

14. Performance Testing of a Resolution-Level Vector-Controlled WM Inverter-Fed IPM Motor Drive, The University of Manchester, Manchester, UK, July 2008.

15. Wavelet Modulation: A Novel Approach to Improve the Performance of 3ϕ Inverters, The Royal Military College of Canada (RMC), Kingston, On. September 2007.

16. Wavelet Modulated Inverters: a Promising Application for Utilizing Renewable Energy, The University of Warwick, Coventry, UK, July 2007.

17. Three-Phase Wavelet Modulated Inverters: Potential Industrial Applications, ABB Switzerland Ltd. Corporate Research, Baden, Switzerland, February 2007.

18. Wavelet Functions: a Promising Tool for Applications in Power systems and Power Converters, McGill University, Montreal, Quebec, May 2006.