Francisco de Leon, PhD, FIEEE

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1. Abstract

I received the B.Sc. degree and the M.Sc. degree (summa cum laude) in electrical engineering from the National Polytechnic Institute (IPN), Mexico, in 1983 and 1986, respectively. In 1992 I have obtained the Ph.D. degree also in electrical engineering from the University of Toronto, Canada. From 1992 to 1997 I was with the Graduate Division of the School of Electrical and Mechanical Engineering of the IPN, Mexico. From September 1997 to August 1998 I was on a sabbatical leave at McGill University in Montreal, and from September 1998 to April 1999 I was a post-doctoral researcher at the University of Toronto.

From 1999 to 2007 I held several academic positions in Mexico and worked for the Canadian electric industry in the research and development of standard and special motors and transformers. From 2004 to 2007 I was the Director of R&D at CYME International T&D in St. Bruno (Quebec) developing professional grade software for the analysis of power and distribution systems and cable ampacity. I have joined the Department of Electrical and Computer Engineering of Polytechnic University (previously Brooklyn Poly and now the NYU Tandon School of Engineering) as Associate Professor in September 2007. Obtained tenure in 2013 and was promoted to (full) Professor in September 2019. I was elevated to IEEE Fellow in 2015.

I have many publications including: 113 journal papers (92 in the IEEE Transactions), 5 book chapters, 14 discussions (in the IEEE Transactions), 53 conference papers, and over 12 patents. My papers have been cited over 1700 times in journals contained in the Science Citation Index and more than 4000 times in Google Scholar. I have attracted over $5M in external funding. I have graduated 24 Ph.D. and 27 M.Sc. students. I also have directed the research of 16 postdoctoral fellows and 7 visiting PhD students. I am an Editor of the IEEE Transactions on Power Delivery since 2009 and an Editor/Coordinator of the IEEE Power Engineering Letters since 2011. Since 2020 *I am the Editor-in-Chief of the IEEE Transactions on Power Delivery.*

2. Education and Employment

Education

Ph.D. in Electrical Engineering from the *University of Toronto*, 1992 (Power Devices and Systems). **Dissertation title: "Transformer Model for the Study of Electromagnetic Transients".** Advisor: Prof. Adam Semlyen.

M.Sc. in Electrical Engineering from the *National Polytechnic Institute, Mexico City*, 1986 (Power Systems). **Dissertation title: "Modeling of the Transformer's Magnetizing Impedance".** Advisor: Prof. Jaime Avila-Rosales.

B.Sc. in Electrical Engineering from the *National Polytechnic Institute, Mexico City*, 1983 (Electrical Machine Design). **Dissertation title: "Design of a Panel for Protection, Control and Measurement of two 2625 kVA, 2.4 kV AC Generators".**

Post-Doctoral Studies (all in Electrical Power Engineering)

University of Toronto, September 1998 to March 1999. **Papers: "Iterative Solvers in the Newton Power Flow Problem: Preconditioners, Inexact Solutions, and Partial Jacobian Updates" and "Quasi-Newton Power Flow Using Partial Jacobian Updates".** Advisor: Prof. Adam Semlyen.

McGill University, September 1997 to August 1998. **Paper: "Active Damping of Power System Oscillations by Alternative Power Generation Plants".** Advisor: Prof. Boon-Teck Ooi.

University of Toronto, January to September 1992. **Paper: "Computation of Electro-Magnetic Transients Using Dual or Multiple Time Steps".** Advisor: Prof. Adam Semlyen.

Employment

Current: **New York University** – Associate Professor in the Department of Electrical and Computer Engineering. Associate Professor from September 2007 to August 2019. Obtained tenure in September 2003 and promoted to (full) Professor effective September 2019.

CYME International (Canada) - Director of R&D. Developed professional grade software for power system analysis. From January 2004 to August 2007.

Universidad Michoacana (Mexico) – Titular Professor. September 2001 to December 2003.

Plitron Manufacturing Inc. (Canada) - R&D Engineer. Designed experimental toroidal transformers for new applications. From September 1999 to August 2001.

Windomotion (Canada) - R&D Engineer. Developed a simulator to design motor controllers for automotive power windows. From April to August 1999.

Instituto Politécnico Nacional (Mexico) – Associate Professor, in the Graduate Division of the School of Electrical Engineering September 1992 to August 1997.

Instituto Politécnico Nacional (Mexico) – Lecturer, September 1983 to August 1987.

CONALEP (technical high school in Mexico) – Teacher, September 1982 to August 1983.

3. Grants and Contracts

Externally Funded Research Projects (Total $5,078,818)

(September 2007 to June 2018)

Funded Projects as Sole PI (Total $3,338,012)

1. "*HIGHEST Transformers (HIGH Efficiency Shielded Toroidal transformers) to help distribution network operators for saving energy*" (sole PI), **De Leon ($149,985).** Funded by PowerBridgeNY, Started in June 2014 ended in May 2015.

2. "*C.TrAm - Cable transient ampacity software to monitor temperature of electric cables",* (sole PI), **De Leon ($149,850).** Funded by PowerBridgeNY, Started in June 2014 ended in May 2015.

3. "*Harmonic mitigating power transformer to improve power quality and efficiency*", (sole PI), **De Leon ($149,850).** Funded by PowerBridgeNY, Started in May 2016 ended in April 2017.

4. "*Network Transformer Failure Analysis and Root Cause Determination*". (Sole PI) **De Leon $499,700.00.** Start date: September 2008. Ended in October 2011.

5. "*Testing DEW against the IEEE Test Distribution Feeders*" (Sole PI). **De Leon $99,919.41** by Con Edison. Start date: September 2008. Ended in September 2009.

6. "*Development of Toroidal Core Transformers*". (Sole PI). Funded by DOE **De Leon $951,500.00** (Earmark) and by NYU-Poly $237,875.00. Start date: October 2009. Ended in May 2014.

7. "*Customer Load Model under Varying Voltage Conditions*". (Sole PI). Funded by Con Edison **(De Leon) $264,932.00** Start date: October 2010. Ended in September 2011.

8. "*Analysis of the Load Drop Following Three-Phase Short-Circuits in the Fordham Network*". (Sole PI). Funded by Con Edison **(De Leon) $49,900**. Start date: October 2010. Ended in April 2012.

9. *"Customer Load Model under Varying Voltage Conditions – Phase II: Economic Impact on Utility and Customers*". (Sole PI). Funded by Con Edison **(De Leon) $399,674.00** Start date: July 2011. Ended in June 2012.

10. "*Development of Real-Time Thermal Rating Software for Underground Power Cables*". (sole PI). Funded by LIOS Technology GmbH of Köln, Germany, **(De Leon) $473,643.** Start date: June 2012. Scheduled to end in December 2014.

11. "*Study and Development of Non-Network Reliability Index Models for 4 kV Grids*", (sole PI). Funded by Con Edison: **(De Leon) $149,059**. Start date of Phase I: December 2012 ended December 2013.

Funded Projects as Co-PI (Total $4,079,988 my share is $1,740,806)

1. "*Arc Fault Detection and Localization in Distribution Networks*", Co-Pi with Czarkowski, funded by Con Edison a total of $99,927, **(De Leon $49,964)**. Performance period: January 2013 to December 2013.

2. "*Sensitivity of Medical Equipment and Elevator Controllers to Voltage Reduction*", (Co-PI with Dariusz Czarkowski and Zivan Zabar). Funded by Con Edison a total of $199,694. Czarkowski ($66,565), **De Leon ($66,565)**, Zabar ($66,565). Start date January 2014 ended in December 2014.

3. "*Study and Development of Non-Network Reliability Index Models for 4 kV Grids*", Phases 2 and 3. (Co-PI with Dariusz Czarkowski and Zivan Zabar). Funded by Con Edison a total of $347,934, **De Leon ($115,978).** Performance Period: January 2014 to December 2015.

4. "*Resonant Power Inverters Optimized for Highly Efficient Wireless Power Transfer*", Co-PI with Czarkowski. Funded by PowerBridgeNY a total of $149,850, **(De Leon $74,925)**. Performance period: June 2014 to May 2015.

5. *"Wireless Electric Vehicle Charging and Deployment*", Co- PI with Czarkowski ($48,125), **De Leon ($48,125)**. Funded by GII (Global Innovation Initiative) a total of $96,251. Performance period: May 2014 to March 2016.

6. "*A Meta-Network System Framework for Resilient Analysis and Design of Interdependencies*", (co-PI). Funded by NSF a total of $299,824. Co-PI with Q. Zhu, R. Zimmerman and N. Memon, **(De Leon $74,956)**. Performance period: from October 2014 to September 2016.

7. *NYSRISE (NYS Resilience Institute for Storms and Emergencies). Project: Electric Power System Performance*, PD/PI B. Griffis funded by New York State $2M+ **(De Leon $100,000** – estimated). Performance period: January 2014 to May 2015.

8. "*Modular Programmable Electronic AC/DC Load*", Co-Pi with D. Czarkowski. Funded by Boeing a total of $292,393 **(De Leon $146,197)**. Performance period from June 2013 to December 2015.

9. "*Phase I STTR: Research and Development of High Efficiency Shielded Toroidal Transformers*", Co-PI with Jazebi (my post-doctoral fellow). Funded by NSF a total of $224,862. **(De Leon, $77,012)**. Performance period: December 2015 to December 2016.

10. "*EAGER: Renewables: Game-Theoretic Methods for Analysis and Design of Distributed Renewable-Based Energy Resources in Smart Grids*", Co-Pi with Quanyan Zhu, funded by NSF $245,486, **(De Leon $122,743).** Performance period: January 2016 to December 2017.

11. "*AC Electronic Programmable Load*", Co-Pi with Dariusz Czarkowski, funded by Boeing $140,442 (**De Leon $70,221**). Performance period: January 2016 to December 2016.

12. "*AC Electronic Programmable Load*", Co-Pi with Dariusz Czarkowski, funded by Boeing $140,875 (**De Leon $70,437**). Performance period: January 2017 to December 2017.

13. "*Universal Controller for Interconnection of Distributed Generators with the Utility Lines at Customer Level Voltages*" (Co-PI with Dariusz Czarkowski). Con Edison Funded a total of $149,424.00. **De Leon ($74,712)**; Czarkowski ($74,712). Start date: September 2008. Ended in December 2011.

14. "*Analysis of Secondary Networks Having Distributed Generation Systems*", (Co-PI with Dariusz Czarkowski and Zivan Zabar. Funded by Con Edison a total of $238,759.00; Czarkowski ($79,586); Zabar ($79,586); **De Leon ($79,586)**. Collaborator: Zhong-Ping Jiang ($11,154). Start date: September 2009. Ended in October 2011.

15. "*Development and Modeling of a Universal Power Converter for Fuel Cell Applications in an Aircraft Power System*", (Co-PI with Dariusz Czarkowski). Funded by Boeing a total of $384,010.00. **De Leon ($192,005)**; Czarkowski ($192,005). Start date: October 2009. Ended in December 2012.

16. "*An Interdisciplinary Minor in Nuclear Sciences and Engineering*", Funded by the Nuclear Regulatory Commission (NRC) in 2009. PI/PD: Lorcan M. Folan, Co-PI's: George C. Vradis, Barry Blecherman, Francisco De Leon, Said Nourbakhsh, Richard Wener. Award Period: September 1, 2009 – August 31, 2010. Total award $265,497. **De Leon ($25,000)**.

17. "*Transient and Steady-State Analysis for the 3G Smart Grid Concepts*", (Co-PI with Dariusz Czarkowski). Funded by Con Edison (in competition with Siemens, ABB, Mitsubishi) total amount $346,675; **De Leon ($173,337.50)**; Czarkowski ($173,337.50). Collaborator: Zhong-Ping Jiang ($11,154$). Start Date: December 2009. Ended in December 2012.

18. "*Comprehensive EMTP Study of Consolidated Edison Secondary Distribution Networks*", (Co-PI with Dariusz Czarkowski), Funded by Con Edison a total of $198,234.00; **De Leon ($99,117)**; Czarkowski ($99,117). Start Date: December 2011. Ended in December 2012.

19. "*Development of a Universal Wireless Charging Solution for Electric Vehicles",* Co-PI with Dariusz Czarkowski. HEVO Power, Three phases ($160,249). Phase (1): Proof of Concept. Funded a total of $30,350; **De Leon ($15,175)**; Czarkowski ($15,175). Period from December 2012 to March 2013. Phase (2): $129,889 **De Leon ($64,944)**; Czarkowski ($64,944). Period from June 2013 to May 2014.

Proposals funded, but NYU refused to sign the contract (IP and publication disputes)

My tangible loss was **$745,002**, but the total effect to my group is several million over the next few years due to subsequent proposal that cannot even be submitted to industry.

1. "*Integration of Microgrids and DER"*, NYSERDA (2014), Sole PI, (**De Leon $94,115**). The proposal was for 14 months: from January 2014 to February 2015.

2. "*Conservation of Voltage Reduction - Phase 5: Implementation in Brooklyn-Queens*", Con Edison (2015), Sole PI (**De Leon $450,887**). The proposal was for three years: from January 2016 to December 2018.

3. "*High Performing Grid*", NYSERDA (2017), Co-Pi with Yury Dvorkin for a total of $400,000. (**De Leon ≈$200,000**). The proposal was for two years 2017 and 2018.

Proposals to be submitted

1. **IUCRC Pre-proposal Planning: New York University**: "*Center for Research on Efficient Electricity Distribution* (CREED)", Pre-proposal submitted to NSF and encouraged to submit the full proposal for December 2018. Co-PI with Yury Dvorkin. This is a pre-proposal put together by Yury. NYU is the lead institution with MIT and University of Washington as partner institutions. I am the Center Director because it can only be submitted by tenured faculty, but until this moment (June 2018) most work has been done by Yury. We will work together on the submission of the full proposal.

Submitted proposals, but not funded

1. "*Major Size Reduction of Electric Power Generators using High-Frequency AC Excitation: Application to Wind Turbine Generators*", DOE, ARPA-E solicitation DE-FOA-0001858. Sole-PI, **(De Leon $1,484,591, not funded)**, Project duration: 36 months (2019-2021).

2. "*Wireless Charging of Electric Vehicles in City Environment",* Grand Challenges Proposal (Bill and Melinda Gates Foundation), Co-PI with Dariusz Czarkowski and Michael Knox, total $249,902 **(De Leon $83,300, not funded)** for two years (2014-2015).

3. *Modular Multi-Voltage Power Transformer with Tunable Impedance*, submitted to DOE-FOA-0001579 Next-Generation Transformers – Flexible Designs, July 2016 **(De Leon $311,342.00, not funded)**. Duration 2 years (2017-2018).

4. "*EAGER: Renewables: The Missing Analytical Tool to Study the Integration of Renewables in Distribution Systems: Time-Sequence Power-Flow*", NSF EAGER Renewables, Co-PI with Dariusz Czarkowski **(De Leon $122,743, not funded)**, duration 2 years (2016-2017).

5. EPCN: PD 13-7607: "*Novel Techniques for Mitigation of Geomagnetically Induced Currents (GIC)*", Sole PI **(De Leon, $299,669, not funded)**, submitted to NSF, duration 2 years: September 2016 to Augusts 2018.

6. "*EV Charging Methods to Prevent Overloading and Low Voltages in Dense Urban Networks*", CEATI, Sole PI **(De Leon $120,139, not funded)**, duration one year, 2016.

7. "*Transformer Model for the Calculation of Electromagnetic Transients including Eddy Current Effects*", Sole PI **(De Leon $313,025, not funded)**, submitted to NSF, duration 2 years: May 2012 to April 2014.

8. *"Physically Sound Instantaneous Power Theory for AC Circuits: Accurate Identification of the Power Components for General Nonlinear and Unbalanced Loads from Poynting Vector",* Sole PI **(De Leon $339,520, not funded)**, submitted to NSF, duration 2 years: June 2011 to May 2013.

9. "*Derivation and Measurement of the True Reactive Power for Nonlinear and Unbalanced Circuits*", Sole PI **(De Leon $287,283, not funded)**, submitted to NSF, duration 2 years: June 2010 to May 2012.

10. Four proposals submitted to ABB: "Correct Definition and Measurement of Reactive Power Transferred to Nonlinear Loads", "*Analysis and Mitigation of Overvoltages in Distribution Grids due to Backfeeding Conditions*", "*Transformer Model for the Calculation of Electromagnetic Transients Including Eddy Current Effects*", "*Improved Ampacity Calculation for Power Cables Installed in Air*", November 2012, each one $80,000 **(De Leon $320,000, not funded)**. May 2012 to April 2013.

11. "*Estimating and Enhancing the Maximum Solar Penetration in Secondary Networks*", DOE – Solar Energy Technology Program, Co-PI, with D. Czarkowski and Z. Zabar for a total of $1,673,795, **(De Leon 557,931, not funded)**, duration 3 years, 2010-2013.

Note: There are several more not funded proposals submitted to NSF, DOE, and NYSERDA which are not listed because there is no point.

4. Scholarly Work

Book Chapters

(* indicates supervised student, postdoctoral fellow, or visitor)

1. T. Hong*, **F. de León**, Q. Zhu, "*Optimal Dispatch of Electric Transmission Systems Considering Interdependencies with Natural Gas Systems"* in *Game Theory for Security Risk Management: From Theory to Practice*, Springer, ISBN 978-3-319-75267-9, June 2018.

2. **F. de León**, T. Hong*, and A. Raza*, Section 17 "*Power System Analysis*", *Standard Handbook for Electrical Engineers*, Mc-Graw-Hill, pp. 1053-1096, 2018.

3. **F. de León**, M. Diaz-Aguiló*, and A. Raza*, Chapter 35 "*Conservation Voltage Reduction"* (SGD057), *Smart Grid Handbook*, John Wiley & Sons, Ltd., pp. 661-684, 2016.

4. **F. de León**, R. Salcedo*, X. Ran*, and J. A. Martinez-Velasco, Chapter 12, "Time-Domain Analysis of the Smart Grid Technologies: Possibilities and Challenges" in *Transient Analysis of Power Systems. Solution Techniques, Tools and Applications*, John Wiley & Sons, pp. 481-546, 2015.

5. **F. de León**, P. Gómez*, J. A. Martinez-Velasco, and M. Rioual, Chapter 4, "*Transformers*" in *Power System Transients: Parameter Determination*, CRC Press, Boca Raton FL, 2009, pp. 177-250.

Publications (Refereed Journal Articles)

Number of papers	Journal	Impact Factor
72	IEEE Transactions on Power Delivery	4.415
10	IEEE Transactions on Power Systems	6.807
5	IEEE Transactions on Smart Grid	10.486
4	IEEE Transactions on Magnetics	1.651
3	IEEE Transactions on Power Electronics	7.224
2	International Journal of Power and Energy Systems	4.418
2	IEE Proceedings on Generation, Transmission & Distribution	3.229
2	IET Generation, Transmission & Distribution	3.229
2	IET Electric Power Applications	3.051
2	IET Science, Measurement & Technology	1.895
1	IEEE Transactions on Energy Conversion	4.614
1	IET Power Electronics	2.839
1	IEEE Transactions on Circuits and Systems	3.934
1	Complexity	2.690
1	ASCE Journal of Infrastructure Systems	0.940
1	Applied Computational Electromagnetics Society – ACES Journal	0.590
3	Papers in journals without published impact factor	
Total 113	Weighted average	4.670

(* indicates supervised student, postdoctoral fellow, or visitor)

2020:

1) A. Iravani and **F. de León,** "*Real-Time Transient Stability Assessment Using Dynamic Equivalents and Nonlinear Observers*", paper accepted for publication in the IEEE Transactions on Power Systems.

2) H. Rong and **F. de León**, "*Load Estimation of Complex Power Networks from Transformer Measurements and Forecasted Loads*", paper accepted for publication in Complexity.

3) Q. Wu*, D. Deswal*, M. Yang*, and **F. de León**, "*Experimental Study of Magnetic Effects of Steel Tanks on Three-Phase Transformer Transients",* paper accepted for publication in the IEEE Transactions on Power Delivery.

4) S. Behzadirafi* and **F. de León**, "*Closed-Form Determination of the Impedance Locus Plot of Fault Current Limiters: Asymmetrical Faults*," paper accepted for publication in the IEEE Transactions on Power Delivery.

5) S. Jazebi*, **F. de León**, and A. Nelson, "*Review of Wildfire Management Techniques—Part II: Urgent Call for Investment in Research and Development of Preventative Solutions*", IEEE Transactions on Power Delivery, vol. 35, no. 1, February 2020, pp. 440-450.

6) S. Jazebi*, **F. de León**, and A. Nelson, "*Review of Wildfire Management Techniques—Part I: Causes, Prevention, Detection, Suppression, and Data Analytics",* IEEE Transactions on Power Delivery, vol. 35, no. 1, February 2020, pp. 430-439.

7) W. Wang* and **F. de León**, "*Quantitative Evaluation of DER Smart Inverters for the Mitigation of FIDVR*", IEEE Transactions on Power Delivery, vol. 35, no. 1, February 2020, pp. 420-429.

8) M. Yang*, D. Deswal*, and **F. de León**, "*Mitigation of Half-Cycle Saturation of Adjacent Transformers during HVDC Monopole Operation – Part II: Detecting Zero-Sequence Fault Currents*", IEEE Transactions on Power Delivery, vol. 35, no. 1, February 2020, pp. 16-24.

2019:

9) M. Yang*, D. Deswal*, and **F. de León**, "*Mitigation of Half-Cycle Saturation of Adjacent Transformers during HVDC Monopolar Operation – Part I: Mitigation Principle and Device Design*", IEEE Transactions on Power Delivery, vol. 34, no. 6, December 2019, pp. 2232-2239.

10) D. Deswal* and **F. de León**, "*Generalized Circuit Model for Eddy Current Effects in Multi-Winding Transformers*", IEEE Transactions on Power Delivery, vol. 34, no. 2, March 2019, pp. 638-650 (13 pages!).

11) Q. Wu*, T. Hong*, S. Jazebi*, **F. de León**, *"Experimentally Validated Method to Measure the λ-i Characteristics of Asymmetric Three-Phase Transformers*", IEEE Transactions on Magnetics, Vol. 55, No. 4, pp. 8101009, April 2019.

2018:

12) H. Lu*, **F. de León**, D. Soni*, and W. Wang*, "*Two-Zone Geological Soil Moisture Migration Model for Cable Thermal Rating*", IEEE Transactions on Power Delivery, vol. 33, no. 6, December 2018, pp. 3196-3204.

13) W. Wang*, M. Diaz-Aguiló*, K. B. Mak*, **F. de León**, D. Czarkowski, and R. E. Uosef*, "*Time Series Power Flow Framework for the Analysis of FIDVR Using Linear Regression*", IEEE Transactions on Power Delivery, vol. 33, no. 6, December 2018, pp. 2946-2955.

14) S. Behzadirafi* and **F. de León**, "*Closed-Form Determination of the Impedance Locus Plot of Fault Current Limiters: A Rigorous Approach with Graphical Representation*," IEEE Transactions on Power Delivery, vol. 33, no. 6, December 2018, pp. 2710-2717.

15) A. Sedaghat*, H. Lu*, A. Bokhari*, and **F. de León**, "*Enhanced Thermal Model of Power Cables Installed in Ducts for Ampacity Calculations*", IEEE Transactions on Power Delivery, vol. 33, no. 5, October 2018, pp. 2404-2411.

16) M. Yang*, R. Kazemi*, S. Jazebi*, D. Deswal*, and **F. de León**, "*Retrofitting the BCTRAN Transformer Model with Non-Linear Magnetizing Branches for the Accurate Study of Low-Frequency Deep Saturating Transients*", IEEE Transactions on Power Delivery, vol. 33, no. 5, October 2018, pp. 2344-2353.

17) Z. Li*, S. Wang, X. Zheng, **F. de León**, and T. Hong, "*Dynamic Demand Response using Customer Coupons Considering Multiple Load Aggregators to Simultaneously Achieve Efficiency and Fairness*", IEEE Transactions on Smart Grid, vol. 9, no. 4, July 2018, pp. 3112-3121.

18) T. Hong* and **F. de León**, "*Centralized Unbalanced Dispatch of Smart Distribution dc Microgrid Systems*", IEEE Transactions on Smart Grid, vol. 9, no. 4, July 2018, pp. 2852-2861.

19) H. Lu*, A. Bokhari*, T. Hong*, and **F. de León**, "*Experimental Evaluation of Available Computational Methods for Eddy Current and Hysteresis Losses for Cables Installed in Steel Pipes*", IEEE Transactions on Power Delivery, vol. 33, no. 4, August 2018, pp. 1777-1786.

20) W. Wang*, S. Jazebi*, **F. de León,** and Z. Li*, "*Looping Radial Distribution Systems Using Superconducting Fault Current Limiters: Feasibility and Economic Analysis*", IEEE Transactions on Power Systems, vol. 33, no. 3, May 2018, pp. 2486-2495.

21) T. Hong*, D. Deswal*, and **F. de León**, "*An Online Data-Driven Technique for the Detection of Transformer Winding Deformations*", IEEE Transactions on Power Delivery, vol. 33, no. 2, April 2018, pp. 600-609.

22) J. Wang*, A. Raza*, T. Hong*, A. Cisco Sullberg*, **F. de León**, and Q. Huang, "*Analysis of Energy Savings of CVR including Refrigeration Loads in Distribution Systems*", IEEE Transactions on Power Delivery, vol. 33, no. 1, February 2018, pp. 158-168.

23) H. Lu*, A. Borbuev*, S. Jazebi*, T. Hong*, and **F. de León**, "*Smart Load Management of Distribution-Class Toroidal Transformers using a Dynamic Thermal Model*", IET Generation, Transmission & Distribution, vol. 12, no. 1, January 2018, pp. 142-149.

2017:

24) R. Zimmerman, Q. Zhu, **F. de León**, and Z. Guo, "*Conceptual Modeling Framework to Integrate Resilient and Interdependent Infrastructure in Extreme Weather*", ASCE Journal of Infrastructure Systems, vol. 23, no. 4, Dec. 2017, pp. 04017034.

25) T. Hong* and **F. de León**, "*Controlling Non-Synchronous Microgrids for Load Balancing of Radial Distribution Systems"*, IEEE Transactions on Smart Grid, Vol. 8, No. 6, November 2017, pp.2608-2616.

26) S. Saadat*, A. Borbuev*, and **F. de León**, "*Thermal Analysis of Power Cables Installed in Solid Bottom Trays using an Equivalent Circuit*", IEEE Transactions on Power Delivery, Vol. 32, No. 4, August 2017, pp. 2130-2139.

27) Z. Li*, S. Jazebi*, and **F. de León**, *Determination of the Optimal Switching Frequency for Distribution System Reconfiguration*, IEEE Transactions on Power Delivery, Vol. 32, No. 4, August 2017, pp. 2061-2069.

28) R. Kazemi*, S. Jazebi*, D. Deswal*, and **F. de Leȯn**, "*Estimation of Design Parameters of Single-Phase Distribution Transformers from Terminal Measurements*", IEEE Transactions on Power Delivery, Vol. 32, No. 4, August 2017, pp. 2031-2039.

29) Q. Wu*, S. Jazebi*, and **F. de León**, "*Parameter Estimation of Three-Phase Transformer Models for Low-Frequency Transient Studies from Terminal Measurements*", IEEE Transactions on Magnetics, Vol. 53, No. 7, pp. 8107108, July 2017.

30) R. Hardowar*, S. Rodriguez, R. E. Uosef*, **F. de León**, and D. Czarkowski, "*Prioritizing the Restoration of Network Transformers using Distribution System Loading and Reliability Indices*", IEEE Transactions on Power Delivery, Vol. 32, No. 3, June 2017, pp. 1236-1243.

31) M. Moghaddami, A. I. Sarwat, and **F. de León**, "*Reduction of Stray Loss in Power Transformers Using Horizontal Magnetic Wall Shunts*", IEEE Transactions on Magnetics, Vol. 53, No. 2, February 2017, p. 8100607.

2016:

32) T. Hong*, A. Raza*, and **F. de León**, "*Optimal Power Dispatch under Load Uncertainty using a Stochastic Approximation Method*", IEEE Transactions on Power Systems, Vol. 31, No. 6, November 2016, pp. 4495-4503.

33) C. Alonso* and **F. de León**, "*Experimental Parameter Determination and Laboratory Verification of the Inverse Hysteresis Model for Single-Phase Toroidal Transformers*", IEEE Transactions on Magnetics, Vol. 52, No. 11, November 2016.

34) Q. Deng, J. Liu, M. Bojarski, D. Czarkowski, **F. de León**, and E. Asa, "*Design of a Wireless Charging System with a Phase-Controlled Inverter for Electric Vehicles under Varying Parameters*", IET Power Electronics, Volume 9, No. 13, October 2016, pp. 2461-2470.

35) S. Jazebi*, S. E. Zirka, M. Lambert, A. Rezaei-Zare, N. Chiesa, Y. Moroz, X. Chen, M. Martinez-Duro, C. M. Arturi, E. P. Dick, A. Narang, R. A. Walling, J. Mahseredjian, J. A. Martinez, and **F. de León (Chair of the IEEE Taskforce)**, "*Duality Derived Transformer Models for Low-Frequency Electromagnetic Transients – Part II: Complementary Modeling Guidelines*", IEEE Transactions on Power Delivery, Vol. 31, No. 5, October 2016, pp. 2420-2430.

36) S. Jazebi*, S. E. Zirka, M. Lambert, A. Rezaei-Zare, N. Chiesa, Y. Moroz, X. Chen, M. Martinez-Duro, C. M. Arturi, E. P. Dick, A. Narang, R. A. Walling, J. Mahseredjian, J. A. Martinez, and **F. de León (Chair of the IEEE Taskforce)**, "*Duality Derived Transformer Models for Low-Frequency Electromagnetic Transients – Part I: Topological Models*", IEEE Transactions on Power Delivery, Vol. 31, No. 5, October 2016, pp. 2410-2419.

37) S. Jazebi*, R. Doğan*, B. Kovan*, and **F. de León**, "*Reduction of Inrush Currents in Toroidal Transformers by Sector Winding Design*", IEEE Transactions on Power Electronics, Vol. 31, No. 10, October 2016, pp. 6766-6780.

38) D. Sciano, A. Raza*, R. Salcedo*, M. Diaz-Aguilo*, R. E. Uosef*, D. Czarkowski, and **F. de León**, "*Evaluation of DC-Links on Dense-Load Urban Distribution Networks"*, IEEE Transactions on Power Delivery, Vol. 31, No. 3, June 2016, pp. 1317-1326.

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Conference Papers[ŧ]

ŧ - is it difficult to find the acceptance rate of the conference papers. However, my contributions are mostly reported in the journal papers. I attend conferences mainly to interact with other researchers, but not to present the latest or the highest quality research. The list is incomplete as I do not care too much for conference papers.

(* indicates supervised student, postdoctoral fellow, or visitor)

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14. K. Colak, D Czarkowski, and **F. de León**, "*Energy Minimization for Catenary-Free Mass Transit Systems using Particle Swarm Optimization*", IEEE International Conference on Electrical Systems for Aircraft, Railway and Ship Propulsion (ESARS), Bologna, Italy, 16-18 Oct. 2012.

15. **F. de León**, D. Czarkowski, and V. Spitsa*, "*Development of Data Translators for Interfacing Power-Flow Programs with EMTP-Type Programs: Challenges and Lessons Learned*", presented in the 2012 IEEE/PES General Meeting in San Diego, CA, July 22-26, 2012 and accepted for publication in the IEEE Transactions on Power Delivery.

16. L. Qaseer*, S. Purushothaman*, and **F. de León**, "*Closed-Form Analysis of Squirrel-Cage Induction Motors With Anisotropic Modeling of Stator and Rotor*", presented in the 2012 IEEE/PES General Meeting in San Diego, CA, July 22-26, 2012 and published in the IEEE Transactions on Energy Conversion.

17. P. Gomez*, F. P. Espino-Cortes*, and **F. de León**, "*Computation of the dielectric stresses produced by PWM type waveforms on medium voltage transformer windings*", presented at the 2011 Annual Conference on Electrical Insulation and Dielectric Phenomena (CEIDP), Cancun, 16-19 Oct., 2011, pp. 199-202.

18. J. Peralta*, **F. de León**, and J. Mahseredjian, "*Assessing the Errors Introduced by Common Assumptions Made in Power System Studies*", presented in the 2011 IEEE/PES General Meeting in Detroit, MI, July 24-29, 2011.
19. S. Purushothaman* and **F. de León**, "*Eliminating Sub-Synchronous Oscillations with an Induction Machine Damping Unit (IMDU)*", presented in the 2011 IEEE/PES General Meeting in Detroit, MI, July 24-29, 2011 and published in the IEEE Transactions on Power Systems.
20. **F. de León**, "*Active Damping of Power System Oscillations by Unidirectional Control of Distributed Generation Plants*", Invited paper presented at the 2009 Advanced Energy Conference, Brookhaven National Laboratory, Stony Brook, NY, November 18-19, 2009.
21. **F. de León** and J. A. Martinez, "*Dual Three-Winding Transformer Equivalent Circuit Matching Leakage Measurements*", paper presented at the 2009 IEEE/PES General Meeting, Calgary, Alberta, Canada, July 26-30, 2009. This paper is also printed in the IEEE Transactions on Power Delivery.
22. **F. de León**, "*Smart Grid Applications: Viewpoint of an Electrical Power Engineer*", Invited Conference presented at the DIMACS Workshop on Algorithmic Decision Theory for the Smart Grid at the Center for Discrete Mathematics and Theoretical Computer Science (DIMACS), Rutgers University, NJ, October 25-27, 2010.
23. J. A. Martinez, **F. de León**, and V. Dinavahi "*Tools for Analysis of Distribution Systems with Distributed Resources. Present and Future Trends*", paper No. 978-1-4244-6551-4 presented at the 2010 IEEE/PES General Meeting, Minneapolis, MN, July 25-29, 2010.
24. **F. de León**, "*Active Damping of Power System Oscillations by Unidirectional Control of Distributed Generation Plants*", **Invited Conference** presented at the 2009 Advanced Energy Conference, Brookhaven National Laboratory, Stony Brook, NY, November 18-19, 2009.
25. **F. de León** and J. A. Martinez, "*Dual Three-Winding Transformer Equivalent Circuit Matching Leakage Measurements*", paper presented at the 2009 IEEE/PES General Meeting, Calgary, Alberta, Canada, July 26-30, 2009. This paper is printed now in the IEEE Transactions on Power Delivery.

Before Joining NYU-Poly:

26. **F. de Leon**, "*Ampacity Calculations: Most Frequently Asked Questions*", **Invited Conference** presented as part of the Educational Program of the Spring IEEE/PES-ICC Meeting, Orlando, Florida, May 6-9, 2007.
27. **F. de Leon**, "*Major Factors Affecting Cable Ampacity*", paper ID: 06GM0041, presented at the 2006 IEEE/PES General Meeting, June 18-22, 2006, Montreal, Quebec, Canada.
28. **F. de Leon**, P. St-Roch and C. Beauregard, "*Cable Historical Operating Temperature Estimator*" paper presented at the North American Transmission & Distribution Conference & Expo, June 13-15, 2006, Montreal, Canada.
29. **F. de Leon** and J. Cohen*, "*A Practical Approach to Power Factor Definitions: Transmission Losses, Reactive Power Compensation, and Machine Utilizatio*n", paper ID 06GM0565, presented at the 2006 IEEE/PES General Meeting, June 18-22, 2006, Montreal, Quebec, Canada.
30. **F. de Leon** and S. Magdaleno*, "*Finite Element Analysis of the Virtual Gap Technology: Controlling the Magnetizing Curve"* presented at the RVP-AI/2005, paper number TRO-01, July 2005, Acapulco Mexico.
31. C. Parra* and **F. de León**, "*Digital Simulation of Inrush Currents in Transformers"*, presented at the RVP-AI/2003, paper number TRO-12, July 2003, Acapulco Mexico.
32. **F. de León** and J. Cohen, "*Inconsistencies with the Power and Power Factor Definitions for Nonlinear and/or Unbalanced Circuits. Is the New IEEE 1459-2000 Standard the Solution?",* presented at the RVP-AI'02, paper number SIS-23, July 2002, Acapulco, Mexico.
33. **F. de León**, B. Gladstone, and M. van der Veen, "*Transformer-Based Solutions to Power Quality Problems*", presented at the Fourth International 2001 Power Quality Conference, Rosemont, Illinois, September 9 to 13, 2001, pp. 303-314.

34. M. van der Veen and **F. de León**, "*Narrow Bandwidth Transformers (NBT): A New Power Quality Technology*", presented at the Fourth International 2001 Power Quality Conference, Rosemont, Illinois, September 9 to 13, 2001, pp. 754-758.

35. **F. de León** and B. T. Ooi, "*Damping Power System Oscillations by Unidirectional Control of Alternative Power Generation Plants*", paper presented at the 2001 IEEE/PES Winter Meeting (Columbus Ohio, February 1st, 2001.

36. M. van der Veen, **F. de León**, B. Gladstone, and V. Tatu, "*Measuring and Quantifying Acoustic Noise in Power Transformers in Audio and Video Equipment*", presented at The Audio Engineering Society 109th Convention in Los Angeles, September 22-25, 2000.

37. F. Ceballos* and **F. de León**, "*Electromagnetic Transients Due to Load Rejection in Electric Power Systems*" (In Spanish), paper number RVP'98-SIS-09 presented at the Reunión de Verano de Potencia, July 1998 in Acapulco Guerrero - IEEE Region Mexico, pp. 228-235.

38. J. Martinez-Perez* and **F. de León**, "*Computation of the Leakage Inductance in Power Transformers using Finite Differences*" (In Spanish), paper number RVP'98-TRO-01 presented at the Reunión de Verano de Potencia, July 1998 in Acapulco Guerrero - IEEE Region Mexico, pp. 278-283.

39. J. Cohen*, L. Hernández, **F. De León**, "*On the non-physical existence of Harmonics*", en el 2nd. International Congress on Research in Electrical and Electronics Engineering, Instituto Tecnológico de Aguascalientes, México, 1998.

40. F. Camacho and **F. de León**, "*Origins of Magnetism and Magnetization from Domains Theory*" (In Spanish), paper number RVP'97-EDU-09 presented at the Reunión de Verano de Potencia, July 1997 in Acapulco Guerrero - IEEE Region Mexico, pp. 49-56.

41. J. Martinez-Perez* and **F. de León**, "*Computation of the Electromagnetic Field inside of a Power Transformer: Derivation of the Design Formulae*" (In Spanish), paper number RVP'97-TRO-09 presented at the Reunión de Verano de Potencia, July 1997 in Acapulco Guerrero - IEEE Region Mexico, pp. 199-204.

42. J. Martinez-Perez* and **F. de León**, "*Using Mathematica® for Teaching Electromagnetics*" (In Spanish), paper number RVP'96-EDU-04 presented at the Reunión de Verano de Potencia, July 1996 in Acapulco Guerrero - IEEE Region Mexico, pp. 199-204.

43. F. de León, "*Professional Actualization of the Electrical Engineer: Current Conditions and Future Perspectives*", Reunión de Verano de Potencia (RVP'96), **Invited Conference**, Acapulco, 1996.

44. R. Adame* and **F. de León**, "*Accurate and Efficient Calculation of Cable Parameters Using Mathematica®*" (In Spanish), paper presented at the II Jornadas Latinoamericanas en Alta Tensión y Aislamiento Eléctrico ALTAE'96, October 8-11, 1996, Instituto Tecnológico de Morelia, Michoacán, México, pp. 95-101.

45. C. Fuerte* and **F. De León**, "*Determination of the Maximum Modeling Region for the Study of Electromagnetic Transients in Power Systems*", Primeras Jornadas Latinoamericanas en Alta Tensión y Aislamiento Eléctrico, ALTAE, **Invited Conference**, Barquisimeto Venezuela, 1995.

46. **F. de León**, A. Calva, J. Fuentes, y G. Enríquez, "*Current State of the High Voltaje Enfgineering in Mexico*", Primeras Jornadas Latinoamericanas en Alta Tensión y Aislamiento Eléctrico, ALTAE, **Invited Magisterial Conference,** Barquisimeto Venezuela, 1995.

47. **F. de León**, "*Computation of Electromagnetic Transients in Power Systems using the EMTP*", Reunión de Verano de Potencia (RVP'95), **Invited Conference**, Acapulco Guerrero, 1995.

48. E. Bernal-Luna* and **F. de León**, "*Analysis of the Electromagnetic Field Inside of an Induction Motor*" (In Spanish), paper number RVP'94-GEN-12 presented at the Reunión de Verano de Potencia, July 1994 in Acapulco Guerrero - IEEE Region Mexico, Volume IV, pp. 80-87.

49. C. R. Fuerte*, R. O. Mota, and **F. de León**, "*Representation of the Electric Power System for Electromagnetic Transients Studies*" (In Spanish), paper number RVP'93-SIS-08 presented at the Reunión de Verano de Potencia, July 1993, Acapulco Guerrero- IEEE Region Mexico, pp. 87-98.

50. **F. de León** and A. Semlyen, "*Modeling of Leakage Fields and Inductances of Transformers Using an Image Conductor Method*," paper presented in The Fourth Biennial IEEE Conference on Electromagnetic Field Computation, Toronto, Ontario, October 22 to 24, 1990.

51. J. Avila-Rosales and **F. de León**, "*Influence of the Frequency Dependence on the No-load Losses in Transformers*" (In Spanish), LATINCON 86, Panama City, IEEE Region 9.

52. J. Avila-Rosales and **F. de León**, "*Effects of the Frequency Dependence of the Transformer Iron-Core Parameters on Magnetizing Currents Chopping*" (In Spanish), MEXICON 86, Guadalajara Jalisco - IEEE Region Mexico.

53. J. Avila-Rosales, **F. de León**, and R. Villafuerte, "*State Space Modeling of Transmission Lines with Distributed Parameters for Electromagnetic Transients*" (In Spanish), MEXICON 86 - IEEE Mexico.

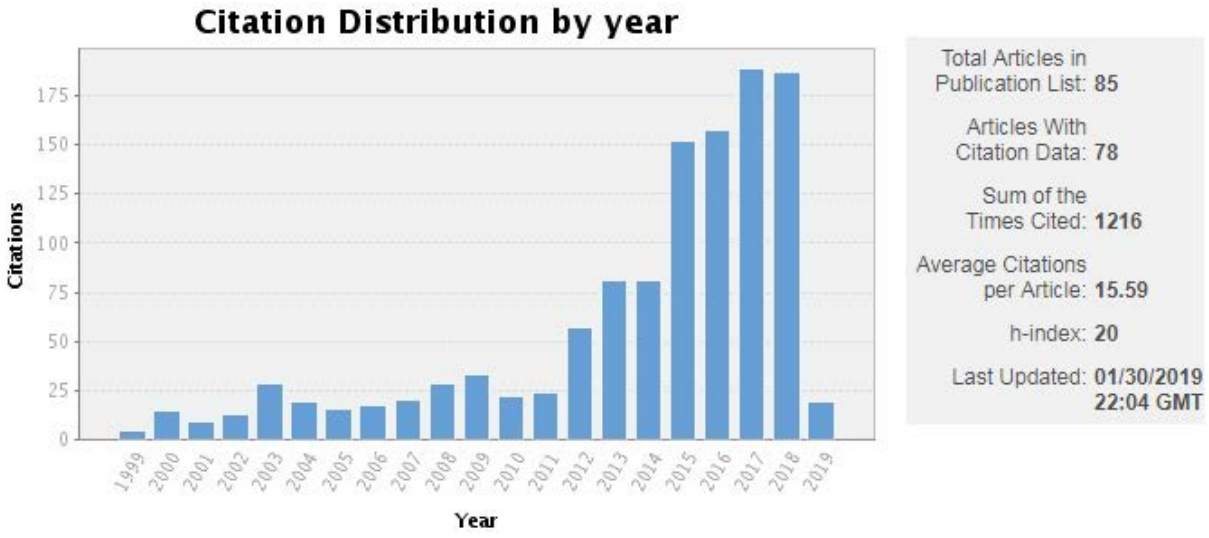
Citations Summary

(to November 10, 2019)

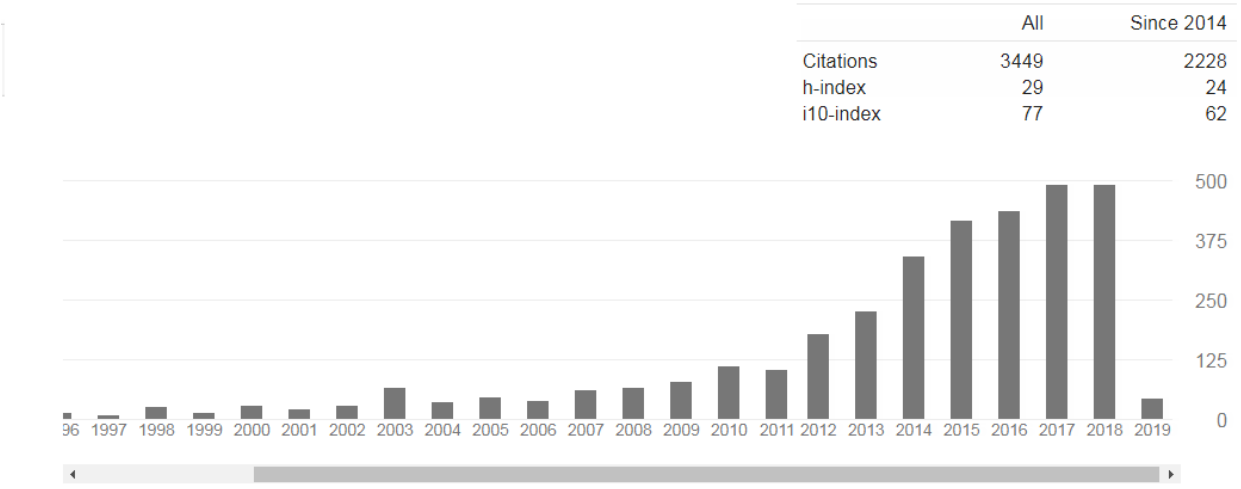
Paper	Science Citation Index	Google Scholar
Complete transformer model for electromagnetic transients	**133**	**313**
Power system transients: parameter determination **		**265**
Experimental Determination of the ZIP Coefficients for Modern Residential, Commercial, and Industrial Loads	**112**	**199**
Time domain modeling of eddy current effects for transformer transients	86	**152**
Analysis of Voltage Profile Problems Due to the Penetration of Distributed Generation in Low-Voltage Secondary …	80	**150**
Efficient calculation of elementary parameters of transformers	50	**121**
Optimal distributed voltage regulation for secondary networks with DGs	75	**125**
A simple representation of dynamic hysteresis losses in power transformers	46	**110**
Reduced Order Model for Transformer Transients	43	**104**
Effects of backfilling on cable ampacity analyzed with the finite element method	41	90
Dual Three-Winding Transformer Equivalent Circuit Matching Leakage	40	85
Field-validated load model for the analysis of CVR in distribution secondary networks: Energy conservation	47	80
A robust multiphase power flow for general distribution networks	38	62
On the Transient Behavior of Large-Scale Distribution Networks During Automatic Feeder Reconfiguration	29	51
Computation of electromagnetic transients using dual or multiple time steps	26	59
Comparing the T and π Equivalent Circuits for the Calculation of Transformer Inrush Currents	18	47
Detailed modeling of eddy current effects for transformer transients	18	48
Quasi-Newton power flow using partial Jacobian updates	22	47
Iterative solvers in the Newton power flow problem: preconditioners, inexact solutions and partial Jacobian ...	20	42
Unbalanced multiphase load-flow using a positive sequence load-flow program	8	35
Mitigation of Inrush Currents in Network Transformers by Reducing the Residual Flux with an Ultra-Low-Frequency …	15	46
Selection of copper against aluminium windings for distribution transformers	16	55
Improved insert geometry for reducing tank-wall losses in pad-mounted	7	15
2D finite-element determination of tank wall losses in pad-mounted transformers	5	13
Eddy current add-on for frequency dependent representation of winding	5	13
Physical time domain representation of powers in linear and nonlinear electrical circuits	8	12
Discussion of "Generalized theory of instantaneous reactive quantity for multiphase power system"	1	14
Discussion of "Could power properties of three-phase systems be described in terms of the Poynting Vector?"	3	4
Mitigation of inrush currents in network transformers by reducing the residual flux with an ultra-low-frequency …	18	41
Modelling transformer core joints using Gaussian models for the magnetic flux density and permeability	2	16
Dual three-winding transformer equivalent circuit matching leakage measurements	6	63
Discussion of "instantaneous reactive power p-q theory and power properties of three-phase systems"	8	2
Accurate and Efficient Computation of the Inductance Matrix of Transformer Windings for the Simulation of …	24	33
Tools for Analysis and Design of Distributed Resources—Part II: Tools for Planning, Analysis and Design …	3	22
Impulse-Response Analysis of Toroidal Core Distribution Transformers for Dielectric Design	17	17
AC power theory from Poynting Theorem: Accurate identification of instantaneous power components in …	6	2
Three–Phase Time–Domain Simulation of Very Large Distribution Networks	17	6
Design Formulas for the Leakage Inductance of Toroidal Distribution Transformers	10	23
Equivalent circuit for the leakage inductance of multiwinding transformers: unification of terminal and duality …	14	22
Dual Reversible Transformer Model for the Calculation of Low-Frequency Transients	15	22
Leakage inductance design of toroidal transformers by sector winding		27
...	**...**	**...**
Total	**1,710**	**4,085**

** Not all these citations are mine. I wrote Chapter 4 of this book and it is impossible to separate the citations to the book to other chapters from those of my chapter.

Science Citation Index



Google Scholar



Editorial Activities

- ***Editor.*** IEEE Transactions on Power Delivery, since 2009
- ***Editor/Coordinator***. IEEE Power Engineering Letters, 2011 to 2017
- ***Guest Editor-in-Chief.*** Special Section on *Advances in Condition Monitoring and Assessment of Power Equipment* for the IEEE Transactions on Power Delivery to be published in August 2019.

Invited Talks

1) F. de Leon, I was invited for a short visit (one week) to the University of Cantabria (Santander, Spain) from May 28 to June 1, 2018 under the program of ***Visits from Renowned International Faculty***. There, I gave the following four talks on my research and teaching to faculty, students, and administrators:

a. Electromagnetic Transients in Transformers
b. Maxwell's Equations for Transformers and Solutions
c. Transformer's Leakage Inductance
d. Renewable energy generation in the world, the USA, and NY State

Press release:

http://web.unican.es/noticias/Paginas/2018/junio_2018/Profesor-de-Ingenieria-Electrica-de-la-Universidad-de-Nueva-York-visita-la-Universidad-de-Cantabria.aspx

2) **F. de Leon**, "*Electromagnetic Transients in Transformers*", Norwegian University of Science and Technology (NTNU), Trondheim, Norway, 2010

3) **F. de León**, "*Smart Grid Applications: Viewpoint of an Electrical Power Engineer*", presented at the DIMACS Workshop on Algorithmic Decision Theory for the Smart Grid at the Center for Discrete Mathematics and Theoretical Computer Science (DIMACS), Rutgers University, October 25-27, 2010.

Patents

Granted

1) 1. Q. Tang, D. Czarkowski, **F. de León**, K. Karimi, S. Liu, "*Power system having repetitive control in symmetric sequences with harmonics cancellation*", US Patent 9,048,726, June 2015.

2) D. Wang, D. Czarkowski, **F. de León**, K. Kamiar, L. Gao, and S. Liu, "*System and Methods for High Power DC/DC Converter*", Pub. No.: US 2013/0083563 A1, April 4, 2013.

3) K. Karimi, S. Liu, D. Czarkowski, **F. de León**, K. Colak, D. Gu, Q. Tang, D. Wang, and M. Bojarski, "*Aircraft Universal Power Converter for Fuel Cell Integration*", US 20150021983, January 22, 2015.

4) M. Bojarski, K. Colak, D. Gu, D. Wang, Q. Tang, D. Czarkowski**, F. de León**, K. Karimi, and S. Liu, "*EMI Filter System for Aircraft Universal Power Converter*", US 20150021994, January 22, 2015.

Patent applications (Patent Pending):

5) Q. Tang, D. Gu, D. Czarkowski, **F. de León**, K. Karimi, and S. Liu, "*Apparatus and Method for Controlling Circulating Current on an Inverter System*", US Patent Application No. 13/752813, filed on January 29, 2013. EPO Patent Application No. 13196974.3-1804, filed on December 12, 2013.

6) **F. de León**, "*Electrostatic Shielding for Transformers*", United States Patent Application, Serial No. 61/857,581, Non-provisional utility filed on July 23, 2013, application number 14/338048.

7) D. Gu, Q. Tang, D. Czarkowski, **F. de León**, K. Karimi, and S. Liu, "*Conversion System for Converting Direct Current into Alternating Current*", filed in Jan. 2014.

8) D. Czarkowski, M. Bojarski, and **F. de León**, "*Resonant Inverter Topology and Control Method*", U.S. Provisional Patent, Feb. 19, 2014.

9) B. Kovan and **F. de León**, "*Reduction of Geomagnetically Induced Currents*", U.S. Provisional Patent, filed in March 2014.

Patent disclosures (to NYU):

10) S. Jazebi* and **F. de León**, "*Design of a Distribution Grade Toroidal Transformer Tank*", DEL03-09, June 2015

11) S. Jazebi* and **F. de León,** "*Winding Strategy for Low-Voltage Coils of Distribution-Class Toroidal Transformers*", DEL03-09, June 2015

12) B. Kovan and **F. de León**, "*Robust Transformer Design Impervious to Half Cycle Saturation Caused by GIC*", May 2015.

13) **F. de León**, "*Major Size Reduction of Electric Power Generators using High-Frequency AC Excitation: Application to Wind Turbine Generators*", February 2018.

5. Awards and Honors

Elevated to **IEEE Fellow** effective January 2015, "***for contributions to transformer modeling for electromagnetic transient studies".*** *Evaluated in the category of Research Engineer/Scientist.* IEEE Fellow is a distinction reserved for select IEEE members whose extraordinary accomplishments are deemed fitting of this prestigious grade. Following a rigorous evaluation procedure less than 0.1% of voting members are selected annually for this member grade elevation.

8. Academic activities

Classes

	Term	No. students	Rating (1 to 5)	
			Course	Instructor
Undergraduate				
EE 4123 – Design Project I – Electrical Power and Machinery	F08	13		
EE 4123 – Design Project I – Electrical Power and Machinery	F12	19		
EE 4123 – Design Project I – Electrical Power and Machinery	F14	12	4.9	4.8
EE 4123 – Design Project I – Electrical Power and Machinery	F15	8	4.3	4.3
EE 4123 – Design Project I – Electrical Power and Machinery	F16	9	4.4	4.6
EE 4123 – Design Project I – Electrical Power and Machinery	F17	6	4.5	4.5
EE 4123 – Design Project I – Electrical Power and Machinery	F18	10	4.5	4.5
Graduate				
EL 5613 – Introduction to Electrical Power Systems	F09	40		
EL 5613 – Introduction to Electrical Power Systems	F10	39		
EL 5613 – Introduction to Electrical Power Systems	F11	52		
EL 5613 – Introduction to Electrical Power Systems	S12	27		
EL 5623 – Finite Elements for Electrical Engineering	F08	10	4.9	4.8
EL 5623 – Finite Elements for Electrical Engineering	S11	10	4.6	5.0
EL 5623 – Finite Elements for Electrical Engineering	S14	18	4.4	4.4
EL 5623 – Finite Elements for Electrical Engineering	S17	18	4.7	4.8
EL 5623 – Finite Elements for Electrical Engineering	F18	8	4.5	4.5
EL 6633 – Transients, Surges and Faults in Power Systems	S08	13	4.6	4.6
EL 6633 – Transients, Surges and Faults in Power Systems	S09	11		
EL 6633 – Transients, Surges and Faults in Power Systems	S10	12		
EL 6633 – Transients, Surges and Faults in Power Systems	F11	25		
EL 6633 – Transients, Surges and Faults in Power Systems	S13	16		
EL 6633 – Transients, Surges and Faults in Power Systems	F14	23	4.8	4.9
EL 6633 – Transients, Surges and Faults in Power Systems	F16	18	4.7	4.8
EL 6633 – Transients, Surges and Faults in Power Systems	S18	7	4.3	4.3
EL 6653 – Power System Stability	F07	34	4.3	4.3
EL 6653 – Power System Stability	S09	15		
EL 6653 – Power System Stability	F10	38		
EL 6653 – Power System Stability	F13	15	4.5	5.0
EL 6653 – Power System Stability	S15	31	4.5	4.5
EL 6613– Electrical Transmission and Distribution Systems	F09			
EL 6613– Electrical Transmission and Distribution Systems	S14	14	4.3	4.7
EL 6613– Electrical Transmission and Distribution Systems	S16	22	4.6	4.7
EL 6613– Electrical Transmission and Distribution Systems	F17	17	4.1	4.1

Certificates Proposed (now eliminated by Departmental vote):

Power Systems Management (Leading Faculty) – Registered in the State of New York on August 17, 2009.

New Courses Developed:

EL 5623 – Finite Elements for Electrical Engineering (2008)
EE 2613 – Fundaments of Electric Power Engineering for the Nonelectrical Students (2009)
EL 6613 – Electrical Transmission and Distribution Systems: Smart Grid (2009)

Graduation

Ph.D. (24)

1. Wenbo Wang, "*Fault Induced Delayed Voltage Recovery (FIDVR): Field Validated Time Series Power Flow Model and Mitigation Using Smart Inverters*", NYU Polytechnic School of Engineering, Brooklyn, NY, April 2019.

2. Digvijay Deswal, "*Generalized Circuit Model for Eddy Current Effects for Transformer Transients and High-Frequency Transformers*", NYU Polytechnic School of Engineering, Brooklyn, NY, April 2019.

3. Qiong Wu, "*Parameter Determination of Asymmetric Three-phase Transformer Models for Low-frequency Transients*", NYU Polytechnic School of Engineering, Brooklyn, NY, April 2019.

4. Haowei Lu, "*Improvements of the IEC Standards for Cable Thermal Rating*", NYU Polytechnic School of Engineering, Brooklyn, NY, December 2018.

5. Reza (Amir) Kazemi, "*Estimation of Design Parameters of Single-Phase Distribution Transformers from Terminal Measurements",* NYU Polytechnic School of Engineering, Brooklyn, NY, December 2016.

6. Tianqi Hong, "*Applications of Microgrids in Three-Phase Unbalanced Electrical Power Systems*", NYU Polytechnic School of Engineering, Brooklyn, NY, December 2016.

7. Ashhar Raza, "*EV Charging Method to Prevent Low Voltages & Overloading in Dense Urban Networks*", NYU Polytechnic School of Engineering, Brooklyn, NY, December 2016.

8. Baris Kovan, "*Mitigation of Geomagnetically Induced Currents by Neutral Switching",* NYU Polytechnic School of Engineering, Brooklyn, NY, April 2016.

9. Shahriar Saadat*, "An Equivalent Circuit for the Thermal Analysis of Power Cables Installed in Solid Bottom Trays", NYU Polytechnic School of Engineering, Brooklyn, NY, September 2015.*

10. Rasim Dogan*, "Transformer-Based Solutions for the Reduction of Inrush and Phase-Hop Currents", NYU Polytechnic School of Engineering, Brooklyn, NY, August 2015.*

11. Jingduo Huang, "Design Algorithm of a Uniform Magnetic Field Transmitter Intended for the Wireless Charging of Electric Vehicles", NYU Polytechnic School of Engineering, Brooklyn, NY, December 2014.

12. Imad Baker, "Thermal Analysis of Cables in Non-Vented Vertical Risers", NYU Polytechnic School of Engineering, Brooklyn, NY, August 2014.

13. Abdullah Bokhari, "Combined Effect of CVO and Penetration of DG in the Voltage Profile and Losses of Low Voltage Secondary Distribution Networks", NYU Polytechnic School of Engineering, Brooklyn, NY, May 2014.

14. Xuanchang Ran, "Potential Negative Impact of DG on Reliability Index Study Based on EMTP-RV Time-Domain Modeling", NYU Polytechnic School of Engineering, Brooklyn, NY, May 2014.

15. Julien Sandraz, "Physical and Measureable Energy Flow in Nonlinear AC Electrical Circuits: Standard and Proposed Power Quantities", NYU Polytechnic School of Engineering, Brooklyn, NY, May 2014.

16. Reynaldo Salcedo, "Investigation of Transient Overvoltages in Heavily Meshed Low-Voltage Underground Distribution Networks", NYU Polytechnic School of Engineering, Brooklyn, NY, April 2014.

17. Roupchan Hardowar, "*Prioritizing the Restoration of Network Distribution Transformers using Distribution Factors and Reliability Indexes*", NYU Polytechnic School of Engineering, Brooklyn, NY, April 2014.

18. Ali Sedaghat, "*Improved Ampacity Calculations for Power Cables Installed in Free Air*", NYU Polytechnic School of Engineering, Brooklyn, NY, April 2014.

19. *Saeed Jazebi, "Dual Transformer Model based on Standard Circuit Elements for the Study of Low- and Mid-frequency Transients", Polytechnic Institute of NYU, Brooklyn, NY, October 2013.*

    - ***Honorable mention in the contest for the Alexander Hessel Award for the Most Outstanding Doctoral Dissertation in Electrical Engineering (2014).***

20. Ashkan Farazmand, "*Improved Experimentally Validated Calculation of Inrush Currents and Harmonic Analysis of Transformers with Diverse Impedance Under Non-sinusoidal Operation Conditions*", Polytechnic Institute of NYU, Brooklyn, NY, May 2013.

21. Deepak Maragal, "*Universal adaptive automatic reclosure technique on transmission line with shunt reactors*", Polytechnic Institute of NYU, Brooklyn, NY, May 2013.

22. *Sujit Purushothaman, "Application and Design of Induction Machine Damping Unit (IMDU) for Eliminating Subsynchronous Resonance", Polytechnic Institute of NYU, Brooklyn, NY, December 2011.*

    - **Winner of the *Richard Rosenthal Award* for Outstanding performance on the PhD qualifier examination (June 2009).**
    - **Winner of the *Alexander Hessel Award* for the Most Outstanding Doctoral Dissertation in Electrical Engineering (2012).**

23. *Resk Uosef, "The Impact of Distributed Generation on Secondary Networks",* Polytechnic Institute of NYU (Poly), January 2011.

Before joining NYU-Poly:

24. *Jose Cohen, "On the Definitions and the Calculation of Powers in Nonlinear Circuits",* Universidad Nacional Autonoma de Mexico (UNAM), April 1999.

M.Sc. (27)

1. Arun Agoram Chandrasekar, "*Size Reduction of Synchronous Machines using High Frequency Excitation*", New York University, April 2018.

2. Jaimin Jha, "*Analytical Solution of the Electromagnetic Field of a Current Carrying Conductor in Multi-Layer Media for Wireless Power Transfer Applications*", New York University, May 2017.

3. Carlos Alonso, "*Experimental Parameter Determination and Laboratory Verification of the Inverse Hysteresis Model*", New York University, April 2016.
    - **Winner of the 2015/2016 *Theodor Tamir Award* for Best MS Thesis in ECE.**
4. David Giglio, "*Time Domain Simulation of The Hysteresis Main Loop of Power Transformers*", New York University, May 2015.

5. Akim Borbuev, "*Experimental and Theoretical Study of Sheath Losses in Cross-Bonded Cables: Conductor Transposition versus Counter-Transposition*", New York University, May 2015.

6. Vasanth Bharadwaja Kolluri, "*Damping Subsynchronous Resonance In a Multi-Machine Power System Using an Induction Machine Damping Unit (IMDU)*", New York University, May 2014.

7. Leonid Lyakhovich, "*Comparing FEM and IEC Standards for Thermal Rating of Transmission Underground Cables"*, Polytechnic Institute of NYU, Brooklyn, NY, August 2013.

8. Don Burkart, "*Double Ended Transmission Line Fault Location*", Polytechnic Institute of NYU, Brooklyn, NY, November 2012.

9. Aditya Sharma, "*Controlling Inverter Based Distributed Generators to Mimic Synchronous Generators*", Polytechnic Institute of NYU, Brooklyn, NY, September 2012.

10. Rasim Dogan, "*Development of Load Model for Residential Customer Subclasses for Voltage Reduction Studies*", Polytechnic Institute of NYU, Brooklyn, NY, May 2012.

11. Matthew Terracciano, "*Thermal Analysis of Cables in Unfilled Troughs: Investigation of the IEC Standard and a Methodical Approach for Cable Rating*", Polytechnic Institute of NYU, Brooklyn, NY, May 2012.

12. Ashish Sharma, "*Modeling and Analysis of Loads Under Voltage Dips Caused by Three Phase Faults*", Polytechnic Institute of NYU, Brooklyn, NY, May 2012.

13. Githanjali Venkataramani, "*Time Domain Analysis of the Impulse Response of Toroidal Transformers*", Polytechnic Institute of NYU, Brooklyn, NY, May 2012.

14. Richard Macwan, "*Economic Impact of Conservation of Voltage Reduction On A Networked System*", Polytechnic Institute of NYU, Brooklyn, NY, May 2012.

15. Noel Augustine, "*Design Program for Distribution Transformers on Toroidal Cores*", Polytechnic Institute of NYU, Brooklyn, NY, December 2011.
16. Reynaldo Salcedo, "*Three-Phase Time-Domain Modeling and Simulation of Electric Distribution Networks*", Polytechnic Institute of NYU, Brooklyn, NY, December 2011.
    - **Co-Winner of the 2011/2012 *Theodor Tamir Award* for Best MS Thesis in ECE (NYU-Poly).**
17. Julien Sandraz, "*Field Validated Transformer Model for the Thermal Analysis of Transformers in Underground Vaults*", Polytechnic Institute of NYU, Brooklyn, NY, December 2011.
18. Ali Alkan, *"Characterization of Loads under Varying Voltage Conditions*", Polytechnic Institute of NYU, Brooklyn, NY, October 2011.
19. Pranoti Kadam, "*Energy Savings by Reducing No Load Reactive Power of Distribution Transformers*", Polytechnic Institute of NYU, Brooklyn, NY, August 2010.
    - **Winner of the 2010/2011 Theodor Tamir Award for Best MS Thesis in ECE (NYU-Poly).**
20. Ólöf Helgadóttir, "*Dynamic Behavior of Geothermal Power Plants Located at a Weak Point of a Transmission System"*, Polytechnic University, Brooklyn, NY, June 2008.
21. Aung Phyo Thant, "*Steady State Network Equivalents for Large Electrical Power Systems*", Polytechnic University, Brooklyn, NY, June 2008.

Before joining NYU-Poly:

22. Jaime Peralta, "Unbalanced Three-phase Load-Flow Using a Positive-Sequence Load-Flow Program". Ecole Polytechnique de Montreal, Montreal, Canada, August 2007.
23. Francisco Ceballos, "*Calculation of Transients Due to Load Rejection in Power Systems*". Instituto Politecnico Nacional, April 1999.
24. Jorge Martinez, "*Numerical Calculation of the Leakage Inductance of Transformers".* Instituto Politecnico Nacional, August 1998.
25. Francisco Camacho, "*Modeling of the Transformer Iron core Based on the Physical Properties of the Ferromagnetic Materials*". Instituto Politecnico Nacional, February 1998.
26. Raul Adame, "*Modeling of Cables for the Computation of Electromagnetic Transients in the Phase Domain*". Instituto Politecnico Nacional, February 1998.
27. Enrique Bernal-Luna, "*Analysis of the Electromagnetic Field Inside of an Induction Motor and its Application to the Study of the Starting and Short Circuit Transients*". Instituto Politecnico Nacional, February 1996.

***Post-doctoral fellows & Visiting scholars* (23)**

Post-Doctors

1. **Dr. Layth Qaseer** (February 2016 to date): Topic: *Electromagnetic analysis of wireless charging of electric vehicles; High-frequency generators.*
2. **Dr. Shayan Behzadi Rafi** (April 2017 to date): *Topic: Fault current limiters and CVR*.
3. **Dr. Li Xianqiang** (September 2017 to October 2018): *Topic: Transformer residual flux*

4. **Dr. Ming Yang** (January 2017 to December 2018): Topic: *Transformer modeling*.

5. **Dr. Tianqi Hong** (January 2017 to March 2017): Topic: *DC microgrids*

6. **Dr. Reza Kazemi** (January 2017 to March 2017: Transformer modeling

7. **Dr. Baris Kovan** (May 2016 to May 2017): Topic: *Design of especial transformers.*

8. **Dr. Michael Omidora** (June 2015 to May 2016). Topic: *High frequency electromagnetic transients in transformers*.

9. **Dr. Haina Rong** (May 2015 to April 2016). Topic: *Load identification in electric networks*.

10. **Dr. Saeed Jazebi** (January 2014 to March 2016). Topic: *Design and construction of a distribution transformer in a toroidal core.*

11. **Dr. Ashkan Farazmand** (June to December 2013). Topic: *Transformer demagnetization.*

12. **Dr. Marc Diaz-Aguiló** (December 2011 to date). Topics: (1) *Conservation of Voltage Optimization*; (2) *Real-Time Thermal Rating of Power Cables.*

13. **Dr. Sujit Purushothaman** (January to August 2012). Topics: (1) *Toroidal distribution transformers*; (2) *Cable thermal rating*; (3) *Damping of power system oscillations*.

14. **Dr. Layth Qaseer** (October 2010 to September 2011). Topics: (1) *Induction Machine Design and Modeling*. (2) *Power definitions in nonlinear circuits*.

15. **Dr. Vitaly Spitsa** (May 2010 to April 2011). Topics: (1) *Transient simulation of smart grid technologies;* (2) *Penetration of distributed generation in distribution networks.*

16. **Dr. Pablo Gómez** August 2008 to July 2010). Topics: (1) *Computation of inductive and capacitive parameters for high frequency transformer models*; (2) *Design of a distribution transformer in a toroidal core.*

Visitors (Ph.D. level research)

17. **Jun Wang** (January 2015 to December 2016): Topic: *Modeling of thermostatic loads*

18. **Zhechao Li** (January 2015 to February 2016). Topic: *Distribution system reconfiguration.*

19. **Nicola Raimondo** (September to December 2013). Topic: *Electromagnetic fields in transformers.*

20. **Matthew Terracciano** (May 2012 to May 2015). Topic: *Real-time thermal rating of cables*.

21. **Saeed Jazebi** (October 2011 to August 2012). Topic: *Modeling of transformer eddy currents*.

22. **Casimiro Álvarez-Mariño** (September to December 2010). Topic: *Multi-winding transformer model*.

23. **Iván Hernández** (February 2009 to August 2010). Topics: (1) *Losses in Transformer Cores*; (2) *Design of a distribution transformer in a toroidal core.*

Ph.D. students in process **(5)**

Full time (3)

Akim Borbuev (started spring 2016) – "*Transformer and Cable Thermal Modeling*"

John-Michael Colef (started fall 2016) – "*Cable Thermal Modeling*"

Roujia Liu (started fall 2018) – "*Charging of Electric Vehicles*"

Part-time (2)

Ali Iravani (started fall 2013) – *"Smart grid for transmission systems"*

David Giglio (started fall 2016) – "*Design of a new generator*"

List of post-doctoral and PhD students supported by their home institutions (or themselves) to work with me:

Name	Funding Institution	Category	Period
Dr. Layth Qaseer	Self	Post-doct.	Feb 2016 – to date
Dr. Shayan Behzadi Rafi	Self	Post-doct.	Apr 2017 – to date
Dr. Ming Yang	Chongqing University	Post-doct.	Jan 2017 – Dec 2018
Dr. Dr. Li Xianqiang	Wuhan University	Post-doct.	Aug 2017 – Sept 2018
Dr. Michael Omidora	Self	Post-doct.	Jun 2015 – May 2016
Dr. Haina Rong	Southwest Jiaotong University	Post-doct.	May 2015 – Apr 2016
Dr. Layth Qaseer	University of Baghdad	Post-doct.	Oct 2010 – Sep 2011
Dr. Pablo Gómez	Polytechnic of Mexico	Post-doct.	Aug 2008 – Jul 2010
Jun Wang	University of Electronic Science and Technology	PhD	Jan 2015 – Dec 2016
Zhechao Li	Huazhong University of Science and Technology	PhD	Jan 2015 – Feb 2016
Casimiro Álvarez	University of Vigo, Spain	PhD	Sep 2010 – Dec 2010
Iván Hernández	CINVESTAV, Mexico	PhD	Feb 2009 – Aug 2010

Committee member of the following PhD defenses

(Dariusz', Mihalis', and Nirod's students)

1) **C. Konstantinou**, 2018, "Leveraging hardware features to enhance the cybersecurity of the smart grid"

2) **K. Zheng**, 2017, "A comparative study of ac-link and dc-link based frequency converters"

3) **Y.-C. Chu**, 2017, "Ac-dc power management ic design with controller sharing concept for wireless power transfer applications".

4) **Z. Geng**, 2016, "Modular programmable electronic ac load based on a three-phase hybrid multilevel voltage source inverter"

5) **E. Asa**, 2016, "Analysis and active control of isolated multi-port semi-bridgeless CLL resonant converter for future renewable energy sources"

6) **J. Shin**, 2016, "Pulse-width modulation controlled real-time resonance tuning methods of wireless power transfer systems for electric vehicles

7) **D. Gu**, 2015, "Resonant control based frequency domain compensation strategy for single-phase boost power factor correction converter"

8) **D. Sciano**, 2015, "Evaluation of dc-links on dense-load urban distribution networks"

9) **M. Bojarski**, 2014, "Multiphase series resonant inverters for wireless charging of electric vehicles"

10) **R. Perez**, "Electromagnetic Modeling of Complex Wave Propagation in a Class of Meta-Media Made of Capacitively Loaded Conducting Loops," September 17, 2014.

11) **Z. Li**, "Wave Guidance and Radiation in Meta Transmission Lines Made of Conducting Dipole and Loop Elements," September 16, 2014

12) **Q. Tang**, 2013, "A New diode-clamping multilevel Inverter with a dc capacitor voltage balance control"

13) **D. Wang**, 2013, "DC/DC power conditioning system for fuel cell in aircraft application"

14) **L. Yu**, 2013, "Optimal decentralized voltage regulation for secondary networks with DG"

15) **K. Colak**, 2013, "Energy optimization in catenary-free railway system and improved time-based model for train movements"

16) **Y. Lu**, 2011, "Ultra high frequency 100 MHz power controller for RFPA power supply"

17) **S. Suresh**, 2009, "Two-loop controlled ultra-high frequency DC-DC converter"

18) **Y. Ten-Ami**, 2009, "Reliability improvements and design optimization of mesh distribution networks"

Committee member of the following MSc defenses

(Dariusz'and Yury's students)

1. A. Hassan, 2018
2. S. V. Shubramaniyan, 2015
3. P. Prathidugupu, 2015
4. V. Panuccio, 2014
5. Z. Chu, 2014
6. Z. Zhao, 2014
7. L. P. Channam, 2014
8. J. Pymento, 2013
9. I. Aleksandrov, 2013
10. P. Pandey, 2011
11. T. Zhu, 2010
12. B. Kovan, 2009
13. B. Chow, 2009
14. S. Dinershteyn, 2009

Undergraduate Students (DP1/DP2)

2018/2019:

1. Chen, Iris
2. Hasan, Mohammed
3. He, Michael
4. Ibrahimi, Allen
5. Ismail-Saad, Amir
6. Li, Franklin K
7. Mirer, Lucas
8. Nawshad, Syed
9. Tam, Darren
10. Zhang, CJ
11. Ahmed, Nader

2017/2018:

12. Carter, Anthony G
13. Hasan, Ali S
14. Karashik, Matthew Joseph
15. Moustafa, Mohamed
16. Nwaokorie, Nnamdi P
17. Thomasevich, Kaelin
18. Znak, Bogdan
19. Pablo Esteban de la Iglesia (Polytechnic University of Catalonia)

2016/2017:

20. Basantes, Melissa C
21. Chen, James
22. Chiang Feng, Danny Y
23. Chu, James
24. Fraz, Ahmed

25. Klein, John Andrew
26. Liang, Cesar
27. Sutton, Justin Paul
28. Uddin, Eftekhar

2015/2016:

29. Bruno, Kowal
30. Chen, Jia Yong
31. Cisco Sullberg, Adriana Sierra
32. Diarrassouba, Bakary
33. Geliebter, Israel
34. Perez, Adeline M
35. Rahman, Taufiq
36. Shah, Syed

2014/2015:

37. Chaudhry, Farhan Aslam
38. Chowdhury, Sharika
39. Gosal, Gurvinder Singh
40. Hossain, Sohrab
41. Hussain, Jumshaid
42. Lam, Vinny
43. Law, Sui Fai
44. Lin, Xiang
45. Morales, Samuel
46. Ramnauth, Khemraj
47. Sacco, Nicholas
48. Saez, James

2012/2013:

49. Ahmed Asfi
50. Alharthi Awadh
51. Cabrera Brian
52. Chowdhury Rifat
53. James Michele
54. Karolidis George
55. Khan Bushra
56. Lama Karma
57. Lyakhovich Leonid
58. Mahamedau Nazir
59. Marcelli Rocco
60. Matthews III Erskine
61. Mindlin Oleg
62. Panuccio Vincenzo
63. Rahaman Mark
64. Romhen Amer
65. Tse Wallace
66. Velez Pedro
67. Huang Bing

2008/2009:

68. Danielle Jean
69. Quentin Williams
70. Diana Musiyenko
71. Konstantin Lednev
72. Leo Stimpson
73. Oliver Williams
74. Andres Zapata
75. Pekir Joseph
76. Judith Cummings
77. William Womg
78. Victoria Pierre-Louis
79. Saanjay Singh
80. Wael Ayoub

9. Service Activities

ECE Department: Vice-Chair for the Undergraduate Curriculum Committee (since March 2018)

NYU (at large): Tandon Representative in the NYU Undergraduate Program Committee (since September 2016).

Profession:

- *Reviewer*. IEEE Transactions on Power Delivery, since 1992
- *Reviewer*. IEEE Transactions on Power Systems, since 1999
- Reviewer. IEEE Transactions on Smart Grid, since 2012
- *Reviewer*. European Transactions on Electric Power, since 2007
- *Reviewer*. International Journal of Power and Energy Systems, since 2007
- *Reviewer*. IET Electric Power Applications, since 2009
- *Reviewer*. International Journal of Emerging Electric Power Systems, since 2009
- *Reviewer*. IEEE Power and Energy Society Letters, since 2007
- *Reviewer*. Electric Power Components and Systems (Taylor & Francis), since 2009
- *Reviewer*: COMPEL: The International Journal for Computation and Mathematics in Electrical and Electronic Engineering, since 2009
- *Reviewer*: IEEE Proceedings, 2010
- *Reviewer*: IEEE Robotics and Automation Magazine, 2010-11
- Reviewer. IEEE Transactions on Dielectrics and Electrical Insulation, 2011
- *Reviewer*: International Journal of Thermal Sciences (Elsevier), since 2010
- *Occasional Reviewer for many other journals*

Scientific Committees:

- **Chair for the Task Force** on *Transformer Modeling for Low Frequency Transients*, part of the General Systems Subcommittee of the Transmission and Distribution Committee, IEEE Power and Energy Society, July 2014 to 2017.
- IEEE Working Group on *Modeling & Analysis of System Transients using Digital Programs*, part of the General Systems Subcommittee of the Transmission and Distribution Committee, IEEE Power and Energy Society, 2007 to date.

- IEEE Task Force on *Data for Modeling System Transients of the Working Group on Modeling & Analysis of System Transients using Digital Programs*, of the General Systems Subcommittee of the Transmission and Distribution Committee, 2007 to date.

External Examiner of PhD students of other institutions:

Masood Moghaddami, "*Design Optimization of Inductive Power Transfer Systems for Contactless Electric Vehicle Charging Applications*", Florida International University, 2018. (via web presentation).

Leslie David Borrill, "*Duality Derived Topological Model of Single Phase Four Limb Transformers for GIC and dc Bias Studies*", University of Cape Town, South Africa, 2017 (report sent via email).

Nafiseh Nikpour, "*Dynamic and Static Voltage Stability Analysis of Distribution Systems in the Presence of Distributed Generation*", University of British Columbia, 2016 (via email).

Nicola Chiesa, "*Power Transformer Modeling for Inrush Current Calculation*", Norwegian University of Science and Technology (NTNU), Norway, 2010 (in person).