

## Mohammed Agamy, *Ph.D., SMIEEE*

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### ***Education***

- **Ph.D. in Electrical Engineering:** *January 2008*  
Department of Electrical and Computer Engineering, Queen's University, Canada,  
Thesis title: "Single Stage Power Factor Corrected Three-Level Resonant Converters."  
Advisor: Prof. Praveen Jain
- **M.Sc. in Electrical Engineering:** *February 2003*  
Department of Electrical Engineering, Alexandria University, Egypt.  
Thesis title: "Fuzzy Variable Structure Control for Induction Motors Drive Systems"  
Advisors: Prof. Omar Sebakhy & Prof. Hasan Yousef
- **B.Sc. in Electrical Engineering (Power Systems & Machines Section):** *June 2000*  
Department of Electrical Engineering, Alexandria University, Egypt. Five-year  
cumulative grade "Distinction with Degree of Honour (90.05%)" Department rank:  
First on a class of 95 students. Graduation projects:
  1. "Three Phase PWM Inverter System for Induction Motor Control."
  2. "Medium and Low Voltage Distribution Systems Design for Residential Areas."

### ***Research Interests***

- Renewable energy sources and their grid integration, High frequency switched mode power supplies design, Resonant converters, Power factor correction, Modeling and control of machines and power converters.
- Robust control systems, Fuzzy logic & Neural network control techniques, Adaptive control and System identification.

### ***Professional Experience***

- General Electric Global Research Center, Power Electronics Laboratory, Niskayuna, NY, USA (October 2008 - present)
  - Senior Power Electronics Engineer (2016 - present)
  - Lead Power Electronics Engineer (2014 - 2016)
  - Research Engineer (2008-2012, Jul.-Dec. 2013)Research focused on medium and high frequency power converter including SiC and GaN converters design for grid integration of renewable energy sources and high frequency power electronic building blocks for MVDC and HVDC architectures.  
Led a DoE funded program on the development of a smart grid ready module integrated micro-inverter along with field testing and UL1741 & IEEE1547 testing. The developed technologies were transitioned to a manufacturing partner through a licensing agreement.  
Led multiple hardware development efforts for high frequency dc-dc converters from the range of 10kW – 1MW and applied to multi-terminal dc networks.

During this time I led several project teams and managed deliverables and budgets for projects ranging from (\$300k to \$3M). I also led and contributed to multiple proposals to internal GE businesses as well as to external customers, such as U.S. Department of Energy, ARPA-E and National Grid.

○ **Major projects:**

- SiC Driver for Low Frequency Radio Frequency Heater (Project Lead)
- Module Embedded Smart Grid Ready Micro-inverter (Project Lead)
- New York REV Demonstration Project (Project Lead)
- Modular Medium Voltage SiC Wind Power Converter (System Integration Lead)
- MVDC for Shipboard Electrification (Power Converter Design Lead)
- SiC Wind Converter (SiC gate drive design)
- Resilient Multi-Terminal HVDC Networks (Converter and System Design Lead)
- High Energy Yield Distributed PV Architectures (Power Electronics Design)
- Advanced PV Inverter Functions (System Analysis)
- Medium Voltage PV Power Plants (System Analysis)
- High Voltage High Frequency Power Conversion for Offshore Wind (System Design)
- MRI Gradient Driver (Auxiliary Electronics Design)

○ **External Funding:**

- STDC/ERA (Canadian Government) – “SiC Driver for Medium Voltage RF Heating Converter” – GE Scope \$2.4MM (PI) (2018-2019)
  - National Grid – “ New York REV program: Neighborhood Solar Buffalo Fruit belt” , GE Scope \$300k (PI) (2016-2017)
  - U.S. Department of Energy – “Smart Grid Ready Microinverter” - \$2.9MM (PI) (2012-2015)
  - ARPA-e – “Resilient Multi-terminal HVDC Networks” - \$5.3MM – (Technical contributor) (2012-2015)
  - DoE “Distributed PV Architectures” – \$3MM (Technical contributor) (2009-2012)
- University of British Columbia, School of Engineering, Kelowna, BC, Canada (August 2012 – present)
    - Adjunct Professor (August 2013- present)
      - Graduate & Postdoctoral Supervision:
        1. “High Frequency Inverters for Distributed Energy Generation,” – Postdoctoral Research – Ashraf Ali Khan
        2. “Single stage power factor corrected LLC converter for LED application,” – M.A.Sc. Thesis – Raed Saasaa.
        3. “A novel step-up/step-down full-bridge DC-DC converter for distributed solar power applications,” – M.A.Sc. Thesis – Yu Cao.
    - Assistant Professor (August 2012 – June 2013)
      - Research: High frequency power converters for renewable energy harvesting, distributed generation systems & railway electrification.

- Teaching: Analog and Digital Systems (APSC 255), Power Systems Analysis and Design (ENGR 455), Topics in Engineering “Modeling and Control of Switching Converters” (ENGR 598)
- Research Funding:
  - \$125k NSERC Discovery Grant – 5 years (PI),
  - \$20k internal UBC Grant for equipment (Co-PI)
  - \$25k Research Grant from Canadian Ministry of Transportation (Co-PI).
- Department of Electrical and Computer Engineering, Queen’s University, Kingston ON Canada
  - *Post-Doctoral Fellow* (February 2008- October 2008)  
Research focused on modeling and digital control of power supplies as well as the FPGA implementation and testing of these controllers. Other research fields include electromagnetic compatibility, and power supply design for alternative energy sources.
  - *Research Assistant* (May 2003 – January 2008)  
Research focusing on the development of high frequency front-end power supplies for servers and telecommunication circuits. Topics covered in this research include: single stage power factor correction, resonant converters, multi-level converters, modelling of switch mode converters and digital control of single stage power factor correction circuits.
  - *Teaching Assistant* (September 2003 – April 2007)  
Courses: *ELEC 431* “Power Electronics” (Fall 2003, Fall 2004 & Fall 2005)  
*ELEC 436* “Electric Machines and Control” (Winter 2006)  
*ELEC 210* “Introductory Electric Circuits and Machines” (Winter 2004, Winter 2006 & Winter 2007)
- Department of Electrical Engineering, Alexandria University, Egypt (September 2000-April 2003).
  - *Assistant Lecturer*  
Research in the area of automatic control and machine drive systems  
Courses: Automatic Control, Modern Control Systems, Electric Circuits Analysis Electric Machines (AC & DC), Digital Systems & Computer Programming, Introduction to Microprocessors, Power Systems and Power Systems Protection.
- Department of Electrical and Electronics Engineering, Arab Academy for Science and Technology, Alexandria, Egypt (January 2001- May 2002)
  - *Teaching Assistant* (Part Time)  
Courses: Electric Circuits, AC Machines and Automatic Control.

### ***Internships***

Training on control systems applications, measurements, instrumentation and on-site electrical power plants in the following companies:

- Alexandria National Iron & Steel Co., Alexandria, Egypt (Summer 1999).
- Abu-Qir Fertilizers Co., Alexandria, Egypt (Summer 1998).
- Alexandria Petroleum Co., Alexandria, Egypt (Summer 1997).

### ***Other Trainings and Certifications***

- Leadership Development Course (Designing Customer Experiences) – (May 2016)
- Building Essential Leadership Skills – (April 2015)
- Project Management Training – (October 2014)
- Six Sigma Green Belt Certification -- (December 2010)
- Electrical Safety and NFPA 70E for Qualified Individuals -- (September 2009)

### ***Awards and Recognitions***

- GE Global Research – Whitney Technical Achievement Award – Highest Team Technical Achievement Award for New Technology Introduction – “Renewable Energy Reservoir” (2018)
- Paper Award at IEEE Energy Conversion Conference and Expo (ECCE) 2016.
- GE Global Research – PCD Technical Achievement Award – Team Award for Resilient Multi-terminal HVDC Architectures Project (2015)
- GE Global Research – PCD Technology Transition Award – Team Award for Module Embedded Smart Grid Ready Micro-inverter Project (2015)
- GE Global Research – PCD Technical Achievement Award – Team Award for Silicon Carbide Solar Inverter Project (2014)
- Best Poster Presentation Award at IEEE Photovoltaics Specialists Conference (2014)
- National Science and Engineering Research Council (NSERC) Discovery Grant (\$125k over a period of 5 years 2013-2018)
- GE Global Research – PCD Technical Achievement Award – Team Award for MRI Gradient Driver Project (2012)
- GE Management Award for outstanding contributions to the “High Energy Yield Distributed PV Systems” project. (May 2011)
- GE Management Award for outstanding contributions to the “MRI Gradient Driver” project. (January 2011)
- Multiple GE Patent Awards and Above and Beyond Performance Awards (2010-2018)
- Listed in “Marquis Who’s Who in Science and Engineering” 11<sup>th</sup> edition (2011-2012), published December 2010.
- GE Management Award for outstanding contributions to the “Advanced PV Inverter Functions” project. (August 2009)
- IEEE-Power Electronics Society Student Travel Grant (PESC 2007) □ IEEE-Industrial Electronics Society Student Scholarship (IECON 2006).
- Ontario Graduate Scholarship (Queen’s University, Canada, 2005/2006).
- Queen’s Graduate Award (Queen’s University, Canada 2003-2007).
- Queen’s University Conference Travel Award (CCECE 2007).
- Queen’s University Conference Travel Award (CCECE 2004).
- Certificate of Merit, First Class Honours, (Alexandria University, Egypt, 1996-2000).
- Excellence Award from the Ministry of Higher Education in Egypt (1995- 2000).
- Prof. Abdel-Samie Mostafa Award for graduating *first* on Electrical Power & Machines Class (Alexandria University, Egypt, 2000).

- Prof. Ibrahim Megahed Award for the highest grade in “Electrical Power Engineering” (Alexandria University, Egypt, 1999).

**Computer Skills** *Relevant software packages include:*

- *Programming:* C/C++, Matlab
- *Circuit Analysis and Design:* PLECS, PSCAD/EMTDC, Cadence (ORCAD), PSIM, SIMetrix, Protel & Simplis.
- *Miscellaneous Software Packages:* MS-Office, Mathcad, Maple.

**Professional Activities**

- Senior Member, IEEE (Member since 2001, elevated to Senior Member in 2011)
  - Member, IEEE-Industrial Electronics Society.
  - Member, IEEE-Power Electronics Society.
  - Member, IEEE-Industry Applications Society.
- Member of the Egyptian Syndicate of Engineers, since 2000.
- Member at Large of Sigma-Xi, Scientific Research Society, since 2009.
- Reviewer for the following Journals & Conferences:
  - IEEE Transactions on Power Electronics
  - IEEE Transactions on Energy Conversion
  - IEEE Transactions on Industrial Electronics
  - International Journal of Electronics
  - IEEE Transactions on Industry Applications
  - IEEE Journal of Photovoltaics
  - IEEE Journal of Emerging and Selected Topics in Power Electronics
  - Energy Conversion Conference & Expo (ECCE): 2009-2017
  - Applied Power Electronics Conference (APEC): 2005-2016
  - Annual Conference of IEEE Industrial Electronics Society (IECON): 2006-2010
  - International Symposium on Industrial Electronics (ISIE): 2006-2008
  - Power Electronics Specialists Conference (PESC): 2004-2008
  - Midwest Symposium on Circuits and Systems (MWSCAS): 2007
  - International Conference on E-Learning and Industrial Electronics (ICELIE): 2006
  - International Conference on Industrial Technology (ICIT): 2004 & 2008 □
- Conference session chair: IECON 2006, ECCE 2010.

**Languages**

- Excellent command of **English** and **Arabic**.
- Basic knowledge of **French** and **German**.

**Citizenship:** *Canadian*

**Status in U.S.:** *Permanent Resident*

## ***Patents & Publications***

### ***Patents (granted)***

- [P1] **M.S. Agamy**, A. Elasser, D. Dong, P.M. Cioffi & A. Caiafa, “SiC Based Solid State Downhole Transfer Switch Architectures,” U.S. patent application #US 20170022766. – Allowed
- [P2] P.M. Cioffi & **M.S. Agamy**, “Solar Micro-inverter Direct Panel Mount,” U.S. patent application #US20160344337 - *Allowed*
- [P3] **M.S. Agamy**, A. Elasser & K. Huh, “System and Method for a DC/DC Converter,” U.S. patent # 9960687
- [P4] D. Dong, A. Caiafa, **M.S. Agamy** & A. Elasser, “Gate Drive for High Voltage Bidirectional Voltage Controlled Switches,” U.S. patent # 9856722
- [P5] X. Liu, **M.S. Agamy**, L.J. Garces & M. Harfman-Todorovic, “A High-efficiency Two-phase Interleaved Soft-switching Inverter,” U.S. patent # 9705422
- [P6] D. Dong, **M.S. Agamy**, R. Raju, L. Garces & Y. Pan, “Method for Zero Voltage Detection in Resonant Converters,” U.S. patent # 9667157
- [P7] **M.S. Agamy**, H.L.N. Wiegman, R. Zhou & A. Berner, “Series Converters for Battery Integration into a DC Network,” U.S. patent #9525355
- [P8] F. Tao, **M.S. Agamy**, A. Elasser & P. Kirlaw, “Gate Drive Unit and Method for Controlling a Gate Drive Unit,” U.S. patent # 9401708.
- [P9] B.G. Thomas, **M. S. Agamy**, A. Elasser, A. Galbraith, S. Bollapragada & M. Garfullin, " System and Method for Design and Optimization of Grid Connected PV Plants with Multiple Module Technology," U.S. patent # 9300140
- [P10] **M.S. Agamy**, M. Harfman-Todorovic, A. Elasser & A. Galbraith, “Systems and Methods for Locating Ground Faults and Insulation Degradation Conditions,” U.S. patent #9103865
- [P11] **M.S. Agamy**, M. Harfman-Todorovic, A. Elasser, A. Galbraith & J.A. Sabate, " Switching Coordination of Distributed DC-DC Converters for Highly Efficient Photovoltaic Power Plants," U.S. patent # 8829715
- [P12] R. L. Steigerwald, **M.S. Agamy**, M. Harfman-Todorovic, J.A. Sabate & A. Elasser, "DC-DC Converter and Method for Controlling the Same," U.S. patent # 8330299
- [P13] P.K. Jain & **M.S. Agamy**, "Adaptive power converter and related circuitry," U.S. patent # 8184456.

### ***Patents (filed/ in progress applications)***

- [P14] R. Ramabhadran, **M.S. Agamy**, A. Elasser & K. Huh, “A boost-buck converter with Coupled inductors for EV charging,” disclosure submitted – filing in progress (GE Docket #324680)
- [P15] **M.S. Agamy**, R. Ramabhadran, A. Elasser, H. Wiegman, K. Rush, “Method to operate energy storage system,” U.S. patent application filed May 2017 (GE Docket #318210)
- [P16] F. Xu, A. Elasser, K. Huh & **M.S. Agamy**, “System and Method for Soft Switching a DC/DC Converter,” U.S. patent application # US20180212545
- [P17] **M.S. Agamy**, L. J. Garces, D. Dong & Y. Pan, “Control of resonant dual active bridge,” Patent application # WO/2017/123241

- [P18] P.M. Cioffi & **M.S. Agamy**, “Universal Micro-inverter Mounting Bracket,” U.S. patent application #US20160344335
- [P19] **M.S. Agamy**, M. Harfman-Todorovic, A. Galbraith & A. Elasser, "Methods for Limiting PV String Voltage," U.S. patent application # US 20130076144
- [P20] R.K. Gupta, **M.S. Agamy**, R. Raju & R. Datta, "Scalable-Voltage Current Fed Power Electronic System for Multi-Phase AC or DC Loads," U.S. patent application # US 20130343089
- [P21] **M.S. Agamy**, M. Harfman-Todorovic & A. Elasser, "Multi-Level Converter," U.S. patent application # US 20140001856
- [P22] R. Ramabhadran, **M.S. Agamy**, A. Elasser & K. Huh, “System and method for high efficiency ultra-fast charging,” – disclosure submitted – in preparation to file(GE Docket #324168)
- [P23] **M.S. Agamy** & Z. Shen, “Method to control resonant converters for variable RF heating load profiles,” disclosure submitted – in preparation to file
- [P24] **M.S. Agamy**, D. Dong, R. Raju & J. Bebic, “Method for control and protection of a resonant converter,” disclosure submitted – in preparation to file (GE Docket #326156)

Refereed Journal Papers

- [J1] D. Dong, **M. Agamy**, M. Harfman-Todorovic, X. Liu and P. Cioffi, “A PV Residential Micro-inverter with Grid-support Function: Design, Implementation and Field Testing,” IEEE Transactions on Industry Applications, Vol. 54, No. 1, January 2018, pp. 469-481.
- [J2] **M. S. Agamy**, D. Dong, L. J. Garces, Y. Zhang, M. E. Dame, X. Wu & Y. Pan, “A High Power Medium Voltage Resonant Dual Active Bridge for MVDC Ship Power Networks,” IEEE Journal of Selected and Emerging Topics on Power Electronics, Vol. 5, No. 1, March 2017 pp. 88-99.
- [J3] A. Elasser, **M. S. Agamy**, J. Nasadoski, J. Mari, B. Bertrand, A. B., Z. Stum, R. Raju, P. Losee & L. Stevanovic, " Static and Dynamic Characterization of 6.5kV, 100A SiC Bipolar PiN Diode Modules," *IEEE Transactions on Industry Applications* Vol. 50, No. 1, January 2014, pp. 609-619.
- [J4] **M. S. Agamy**, M. Harfman-Todorovic, A. Elasser, S. Chi, J. A. Sabate, A. McCann, Li Zhang, F. Mueller & R. L. Steigerwald,"Efficient DC-DC Power Converters for Distributed PV Applications," *IEEE Transactions on Power Electronics*, Vol. 29, No. 2, February 2014, pp.674-684 .
- [J5] **M. S. Agamy**, S. Chi, A. Elasser, M. Harfman-Todorovic, Y. Jiang, F. Mueller & F. Tao, "A High Power Density Dc-Dc Converter for Distributed PV Architectures," *IEEE Journal of Photovoltaics*, Vol. 3, No. 2, April 2013, pp. 791798.
- [J6] **M. S. Agamy** and P. K. Jain, “An Adaptive Energy Storage Technique for Efficiency Improvement of Single Stage Three-Level Resonant AC/DC Converters,” IEEE Transactions on Industry Applications, Vol. 47 No. 1, Jan. 2011, pp. 176-184.
- [J7] **M. S. Agamy** and P. K. Jain, “A Hybrid State Space Model for Single Stage ThreeLevel Resonant Rectifiers,” *International Review on Modelling and Simulation*, Vol. 4, No. 1, Jan./Feb. 2011 pp. 441-456.

- [J8] **M. S. Agamy** and P. K. Jain, "A Three Level Resonant Single Stage Power Factor Correction Converter: Design, Analysis and Implementation," IEEE Transactions on Industrial Electronics, Vol. 56, No. 6, June 2009, pp. 2095-2107.
- [J9] **M. S. Agamy** and P. K. Jain, "Performance Comparison of Different Three-Level Resonant Topologies for Single Stage Power Factor Correction," IEEE Transactions on Power Electronics, Vol. 24, No. 4, April 2009, pp. 1023-1031.
- [J10] **M. S. Agamy** and P. K. Jain, "Single Stage Three Level Full Bridge Resonant AC/DC Converter," The International Journal of Electronics, Vol. 96, No. 3, March 2009, pp. 281-294, publisher: Taylor & Francis.
- [J11] **M. S. Agamy** and P. K. Jain, "A Variable Frequency Phase Shift Controller for Single Stage Three Level Resonant PFC Converters," IEEE Transactions on Power Electronics, Vol. 23, No. 5, Sept. 2008, pp. 2290-2300.
- [J12] **M. S. Agamy**, H. A. Yousef and O. A. Sebakhy, "On the Design and Stability of an Adaptive Fuzzy Sliding Mode Controller," The International Review of Automatic Control, Vol. 1, No. 1, May 2008, publisher: Praise Worthy Prize, pp. 72-80.
- [J13] **M.S. Agamy** and P. K. Jain, "A Robust Controller for a Three-Level Single Stage Resonant AC/DC Converter," The International Review of Electrical Engineering, Vol. 2, No. 5, Oct. 2007, publisher: Praise Worthy Prize pp.687-694.
- [J14] D. Dong, **M.S. Agamy**, J. Bebic, G. Mandrusiak & Q. Chen, "A Modular SiC High Frequency Solid State Transformer for Medium Voltage Applications," Submitted to IEEE Journal of Emerging and Selected Topics in Power Electronics.
- [J15] A. Khan, W. Eberle, L. Wang, **M. Agamy**, F. Akbar & W. Lu, "Boost Inverter Using Coupled Inductors and Half Cycle Phase Shifted Modulation," Submitted to IEEE Trans. on Industrial Electronics
- [J16] R. Saasaa, W. Eberle & **M.S. Agamy**, "A Single-Stage Interleaved LLC Power Factor Corrected LED Driver," Submitted to IEEE Transactions on Industry Applications.
- [J17] **M. Agamy**, F. Tao & A. Elasser, " Gate Driver for Medium Voltage SiC Thyristors," Submitted to IEEE Transactions on Power Electronics.

Refereed Conference Papers

- [C1] D. Dong, R. Raju, **M.S. Agamy**, & G. Ganireddy, "Rotational Control Method with Transformer Loss Savings in Solid State Transformer Based Converter System," Accepted for publication, to appear in proceedings of IEEE Energy Conversion Conference and Expo (ECCE) 2018.
- [C2] Q. Chen, R. Raju, D. Dong & **M.S. Agamy**, "High Frequency Transformer Insulation in Medium Voltage SiC enabled Air Cooled Solid State Transformers," Accepted for publication, to appear in proceedings of IEEE Energy Conversion Conference and Expo (ECCE) 2018.
- [C3] A. Elasser, **M.S. Agamy** R. Ramabhadran, & K. Huh, "Emerging GaN Power Devices for Efficient and Compact Power Conversion," Accepted for publication, to appear in proceedings of IEEE Energy Conversion Conference and Expo (ECCE) 2018.
- [C4] D. Dong, **M. S. Agamy**, R. Raju & R. Zhou, "Design of H-bridge Converter with 1.7kV SiC MOSFET on Insulated Metal Substrate for High Speed High Frequency



- Operation,” Proceedings of IEEE Energy Conversion Conference and Expo (ECCE) 2017.
- [C5] **M.S. Agamy**, D. Dong, L. Garces, Y. Zhang, A. Atalla, M. Dame & Y. Pan, “High Power Medium Voltage Resonant Dual Active Bridge,” Proceedings of IEEE Energy Conversion Conference and Expo (ECCE) 2016
- [C6] A. Atalla, **M.S. Agamy**, M. Dame, L. Hao, K. Weeber & Y. Pan, “Advancements in High Power High Frequency Transformer Design for Resonant Converter Circuits,” Proceedings of IEEE Energy Conversion Conference and Expo (ECCE) 2016 [**Best Paper Award**]
- [C7] D. Dong, L. Garces, **M.S. Agamy**, J. Dai, H. She, X. Li & Y. Pan, “Control and Operation of Resonant Dual Active Bridge for DC Marine Architectures,” Proceedings of IEEE Energy Conversion Conference and Expo (ECCE) 2016
- [C8] R. Saasaa, W. Eberle & **M.S. Agamy**, “A Single-Stage Interleaved LLC PFC Converter,” Proceedings of IEEE Energy Conversion Conference and Expo (ECCE) 2016.
- [C9] X. Liu, **M.S. Agamy**, M. Harfman-Todorovic, L. Garces & D. Dong, “A Low Cost Micro-Inverter with Soft Switching Capability Utilizing Circulating Current,” Proceedings of IEEE Applied Power Electronics Conference (APEC), March 2016, pp. 3403-3408.
- [C10] X. Wu, I. Ndiaye & **M.S. Agamy**, “Impact of Micro-inverter Reactive Power Support Capability in High Penetration Residential PV Networks,” Proceedings of the IEEE Photovoltaics Specialists Conference (PVSC), June 2015
- [C11] C. Bufi, A. Elasser & **M.S. Agamy**, “A System Reliability Trade-off Study for Centralized and Distributed PV Architectures,” Proceedings of the IEEE Photovoltaics Specialists Conference (PVSC), June 2015.
- [C12] R.L. Sellick, **M.S. Agamy**, L. Hao, K.R. Weeber, “A high-speed HVDC breaker topology with integral voltage-changing capability,” Proceedings of IEEE Electric Insulation Conference (EIC) June 2015.
- [C13] **M.S. Agamy**, M. Dame, J. Dai, X. Li, P.M. Cioffi, R. Sellick, “Resonant Converter Building Blocks for High Power, High Voltage Applications,” Proceedings of IEEE Applied Power Electronics Conference (APEC), March 2015.
- [C14] R.K. Gupta, **M.S. Agamy**, M.E. Dame, J. Dai, X. Li, P.M. Cioffi, R.L. Sellick, “Fault resilient, high efficiency stacked resonant converters for multi-terminal DC architectures,” Proceedings of IET International Conference on AC and DC Transmission (ACDC), February 2015.
- [C15] M. Harfman-Todorovic, F. Tao, **M.S. Agamy**, D. Dong, X. Liu, L. Garces, R. Zhou, E. Delgado, D. Marabell, C. Stephens, R. Steigerwald, “A high efficiency PV microinverter with grid support functions,” Proceedings of the Energy Conversion Conference and Expo (ECCE) Sept. 2014.
- [C16] M. Harfman Todorovic, F. Tao, R. Zhou, R. Steigerwald, **M.S. Agamy**, Y. Jiang, L. Garces, M. Schutten, D. Marabell, “A multi-objective study for down selection of a micro-inverter topology for residential applications,” Proceedings of the IEEE Photovoltaics Specialists Conference (PVSC), June 2014 [**Best Poster Award**]
- [C17] A. Elasser, **M. S. Agamy**, M. Harfman-Todorovic, S. Chi, A. McCann, B. Baxter, B. Smith, L. Zhang, L. Wang, F. Tao, J. Sabate, F. Mueller, J. Dodge, S. Gonzalez & A.

- Fresquez, "Field Installation and Evaluation of a 20kW Rooftop PV System Using 3.5kW String Level MPPT DC/DC Converters and a Central Inverter," Proceedings of the IEEE Photovoltaics Specialists Conference (PVSC), June 2013
- [C18] **M. S. Agamy**, M. Harfman-Todorovic & A. Elasser, "Ground Fault and Insulation Degradation Detection and Localization in PV Plants," Proceedings of the IEEE Photovoltaics Specialists Conference (PVSC), June 2013
- [C19] **M.S. Agamy**, S. Essakiappan, M. Harfman-Todorovic & A. Elasser, "A Transformer-less Partial Power Boost Converter for PV Applications Using a ThreeLevel Switching Cell," Proceedings of IEEE Applied Power Electronics Conference (APEC), March 2013.
- [C20] A. Elasser, **M. S. Agamy**, J. Nasadoski, J. Mari, B. Bertrand, A. B., Z. Stum, R. Raju, P. Losee & L. Stevanovic, " Static and Dynamic Characterization of 6.5kV, 100A SiC Bipolar PiN Diode Modules," Proceedings of the Energy Conversion Conference and Expo (ECCE) Sept. 2012.
- [C21] **M. S. Agamy**, M. Harfman-Todorovic, A. Elasser, J. A. Sabate, A. McCann, Li Zhang, F. Mueller & R. L. Steigerwald, " A High Efficiency DC-DC Converter Topology Suitable for Distributed Large Commercial and Utility Scale PV Systems," Proceedings of EPE-PEMC, ECCE Europe, Sept. 2012.
- [C22] **M. S. Agamy**, S. Chi, A. Elasser, M. Harfman-Todorovic, Y. Jiang, F. Mueller & F. Tao, "A High Power Density Dc-Dc Converter for Distributed PV Architectures," Proceedings of the IEEE Photovoltaics Speciatists Conference (PVSC), June 2012.
- [C23] **M. Agamy**, M. Harfman-Todorovic, A. Elasser, J. Sabate & R. Steigerwald, "DcDc Converter Topology Assessment for Large Scale Distributed Photovoltaic Plant Architectures," Proceedings of the Energy Conversion Conference and Expo (ECCE) Sept. 2011, pp.764-769.
- [C24] **M. S. Agamy** and P. K. Jain, "An Overview of Methods to Increase the Power Handling Capability of Single Stage AC-DC Converters," Proceedings of the IEEE International Symposium on Industrial Electronics (ISIE) 2011, pp. 147-152.
- [C25] A. Elasser, **M. Agamy**, J. Sabate, R. Steigerwald, R. Fisher & M. HarfmanTodorovic, "A Comparative Study of Central and Distributed MPPT Architectures for Megawatt Utility and Large Scale Commercial Photovoltaic Plants," Proceedings of the 36<sup>th</sup> Industrial Electronics Annual Meeting (IECON) 2010, pp. 2753-2758.
- [C26] **M. S. Agamy** and P. K. Jain, "An Adaptive Energy Storage Technique for Efficiency Improvement of Single Stage Three-Level Resonant AC/DC Converters," Proceedings of IEEE Applied Power Electronics Conference (APEC) 2009, pp. 1005-1010.
- [C27] **M. S. Agamy** and P. K. Jain, "A Small Signal State Space Model of Single Stage Three Level Resonant AC/DC Converters," Proceedings of the IEEE Power Electronics Specialists Conference (PESC) June 2008, pp.1407-1413.
- [C28] **M. S. Agamy** and P. K. Jain, "A Variable Structure Controller for a Single Stage Three Level Resonant PFC Rectifier," Proceedings of the proceedings of the IEEE Applied Power Electronics Conference (APEC), February 2008, pp. 1207-1213.
- [C29] **M. S. Agamy** and P. K. Jain, "A Discrete Time Controller for a Single Stage Three Level Resonant PFC Converter operated with Variable Frequency Phase Shift

- Modulation,” Proceedings of the International Telecommunication Energy Conference (INTELEC), September 2007, pp. 242-247.
- [C30] **M. S. Agamy** and P. K. Jain, “Modelling of Single Stage Three Level Resonant AC/DC Converters Operating with Variable Frequency Phase Shift Modulation,” Proceedings of the 38<sup>th</sup> Power Electronics Specialists Conference, (PESC), June 2007, pp. 1962-1967.
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