Samir Kouro

Curriculum Vitae

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Personal Information

Birth	March 14th, 1978, Valdivia (Chile)	Citizenship	Chilean/Belgian
Work Address	Av. España 1680, Valparaíso, Chile	Web page	`www.profesores.elo.utfsm.cl/~skr`
LinkedIn	`www.linkedin.com/in/samirkouro`	Researcher ID	`www.researcherid.com/rid/E-9167-2012`
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Biography

Samir Kouro was born in Valdivia, Chile, in 1978. He received the M.Sc. and Ph.D. degrees in electronics engineering from the Universidad Tecnica Federico Santa Maria (UTFSM), Valparaíso, Chile, in 2004 and 2008, respectively. In 2004, he joined the Electronics Engineering Department, UTFSM, as a Research Assistant, and has served this institution in different positions, being currently an Associate Professor. From 2009 to 2011 he was a Postdoctoral Fellow in the Department of Electrical and Computer Engineering, Ryerson University, Toronto, Canada. His research interests include power electronics, control, renewable energy power conversion systems (photovoltaic and wind), and electro-mobility applications.

Dr. Kouro has directed 7 Chilean National Fund projects (Fondecyt), is founding member and Principal Investigator of the Solar Energy Research Center (SERC-Chile) one of the national priority areas centers of excellence of Chile, and founding member and Titular Researcher of the Advanced Center of Electrical and Electronics Engineering (AC3E), one of the technology transfers centers of excellence in Chile. He has coauthored one book, five book chapters and over 150 refereed journal and conference papers. He has served as Special Session organizer and Chair of 15 special sessions in conferences and has been Guest Editor for 5 Special Sections in IEEE Journals and one for IET. Dr. Kouro was Associate Editor of the International Journal of Electrical Power and Energy Systems (JEPE) of Elsevier in 2016-2017.

Dr. Kouro has been included in the 2018 Clarivate Highly Cited Researchers list, received the 2018 IEEE-AIE Outstanding Engineer Award, the 2016 IEEE Industrial Electronics Bimal K. Bose Award for Industrial Electronics Applications in Energy Systems, the 2015 IEEE Industrial Electronics Society J. David Irwin Early Career Award, the 2012 IEEE Power Electronics Society Richard M. Bass Outstanding Young Power Electronics Engineer Award, the 2015 2nd Prize Paper Award of the IEEE Transactions on Power Electronics, the 2012 IEEE Industry Applications Magazine 1st prize Paper Award, the 2012 IEEE Transactions on Industrial Electronics Best Paper Award, the 2008 IEEE Industrial Electronics Magazine Best Paper Award, the 2005 Ismael Valdes Award from the Institute of Engineers of Chile, and was recognized by the President of the Republic as the youngest researcher of the Chilean National Research and Development Fund in 2004.

Academic profile at a glance

Number of ISI journal papers: 54

Number of conference papers: 115

H-index: 33*, 38**, 41***

Number of ISI citations: 8,658*; 11,190**; 15,859***

Source: *Thomson Reuters Web of Science, ** Scopus, ***Google Scholar

Education

2004 – 2008 Ph.D. in Electronics Engineering. Thesis: "Multilevel Converters Performance Improvements" (Thesis supervisor, Prof. Dr. Ing. José Rodríguez). Universidad Técnica Federico Santa María (UTFSM), Valparaíso, Chile.

2003 – 2004 M.Sc. in Electronics Engineering, UTFSM, Valparaíso, Chile.

1997 – 2002 Electronics Engineer, UTFSM, Valparaíso, Chile.

1991 – 1996 Secondary education, Windsor School, Valdivia, Chile.

1985 – 1990 Primary education, Sint-Jan Berchmanscollege (now Groenendaalcollege), Merksem, Belgium.

Work History

2019 – to date Director of Innovation, UTFSM.

2014 – to date Associate Professor, Electronics Engineering Department, UTFSM.

2018 – 2019 Executive Director, Knowledge Based Innovation (PMI InES), UTFSM.

2011 – 2014 Research Academic, Electronics Engineering Department, UTFSM.

2009 – 2011 Postdoctoral Fellow, Department of Electrical and Computer Engineering, Ryerson University, Toronto, Canada.

2008 – 2011 Associate Researcher, Electronics Engineering Department, UTFSM.

2004 – 2008 Research assistant, Electronics Engineering Department, UTFSM.

Teaching Experience

- Diploma Program in University Teaching in Engineering, Science and Technology, LASPAU–Academic and Professional Programs for the Americas, affiliated with Harvard University. November 2012 to August 2013.
- Undergraduate course "Industry Applications of Power Converters" (elo-384). Electronics Engineering Department, UTFSM, in 2007 (4.84/5 Teacher evaluation score), 2008 (4.75/5 Teacher evaluation score), 2011 (4.95/5 Teacher evaluation score), 2012 (5/5 Teacher evaluation score), 2013 (4.72/5 Teacher evaluation score), 2014 (4.75/5 Teacher evaluation score) and 2015 (4.42/5 Teacher evaluation score).
- Graduate course "Advanced Industrial Electronics Seminar" (ipd-413). Electronics Engineering Department, UTFSM, in 2012 (4.92/5 Teacher evaluation score), 2013 (5/5 Teacher evaluation score), 2014 (5/5 Teacher evaluation score), 2015 (4.53/5 Teacher evaluation score) and 2016 (3.9/4 Global performance score).
- Undergraduate course "Advanced Electromechanical Systems" (ele-847), Department of Electrical and Computer Engineering, Ryerson University, 2009 (4.7/5 Teacher evaluation score).
- Undergraduate course "Industrial electronics" (elo-384). Electronics Engineering Department, UTFSM, in 2014 (4.4/5 Teacher evaluation score), and 2015 (4.77/5 Teacher evaluation score).
- Undergraduate course "Electronics B" (elo-108). Electronics Engineering Department, UTFSM, in 2015 (4.47/5 Teacher evaluation score).
- Undergraduate course "Introduction to Engineering" (iwg-101). Electronics Engineering Department, UTFSM, in 2016 (3.8/4 Global performance score).

Projects

Research and Development

[1] Principal Investigator, FONDECYT project no. 1191532, "Interleaved and Bidirectional Partial Power DC-DC Converters for Photovoltaic and Energy Storage Applications". Period: April 2019 – March 2022.

[2] Coinvestigator, FONDECYT project no. 1191680, "Fuel Cell Lifespan extension in Hybrid Systems: Energy Management Strategies for Electromobility'. Period: April 2019 – March 2023.

[3] Coinvestigator, FONDECYT project no. 1191376, "DC-DC converters for direct integration of photovoltaic systems into the copper electro-refining process". Period: April 2019 – March 2022.

[4] Principal Researcher, Fondequip no. EQM180215, "Battery Emulator for application in electromobility, renewable energies and micro-grids".

[5] Executive Director, "Science-based Innovation (Innovación basada en ciencia)", PMI–InES FSM1402, Ministery of Education. Period: Jan. 2018 - Feb. 2019.

[6] Associate researcher, "AtamoS-TEC: Programa de investigación y desarrollo de tecnologías fotovoltaicas de alta radiación y clima desértico". Period: Jan. 2018 - 2022.

[7] Principal researcher, CONICYT REDES no. 170213, "DC-DC converter topologies and control for DC distributed electric vehicle fast charging stations", with the Havelaar Electric Vehicle Research Centre of the University of Toronto, Period Jan. 2018 - Jan. 2020.

[8] Associate researcher, CONICYT REDES no. 170217, "Control Strategies and hardware topologies for the operation of Energy Storage system in microgrids", with the LAPLACE laboratory of the University of Toulouse, Period Jan. 2018 - Jan. 2020.

[9] Principal Investigator, FONDECYT project no. 1171823, "High Efficiency Partial Power DC-DC Converters for String and Multi-string Photovoltaic Systems". Period: March 2017 – March 2019.

[10] International Associated Researcher, Project TEC2016-78430-R "Sistemas Hibridos de Almacenamiento de Energía para la Mejora en la Gestión de Redes Eléctricas del Futuro", Plan Estatal 2013-2016 Retos - Proyectos I+D+i, España, December 2016 – December 2020.

[11] Principal Investigator, FONDECYT project no. 1151426, "Power converters and control for DC photovoltaic energy conversion systems". Period: March 2015 – March 2017.

[12] Co-researcher, FONDECYT regular no. 1150829, "Predictive control of High Power Inverters". Period: March 2015 – March 2017.

[13] Titular Researcher, 3^{rd} National Program For Basal Funding of Science and Technology Centers of Excellence (CONICYT), project FB0008 "Advanced Center for Electrical and Electronic Engineering (AC3E)". Period: October 2014 – October 2019.

[14] Principal Investigator, FONDECYT project no. 1131041, "Multilevel converter configurations for multiphase and open-end winding PMSG Wind Energy Conversion Systems". Period: March 2013 – March 2015.

[15] Principal Investigator, FONDAP Center of Excellence project no. 15110019: "Solar Energy Research Center, SERC Chile", January 2013 – to date.

[16] Associated Researcher, AKA-CONICYT project: "Environmental impact analysis, and sustainability - efficiency based criteria for solar energy projects in Northern Chile". Period: 2013–2015.

[17] Principal researcher, CONICYT - MEC (Attraction of Advanced Human Capital Short Stay Modality) n°: 80130057: "Analysis and development of low-voltage multilevel converter topologies for photovoltaic systems" with Prof. Thierry Meynard as visiting acholar. Period 2014-2015.

[18] Principal researcher, CONICYT REDES no. 130112, "Renewable energy conversion systems and smart grid research network", Period 2014.

[19] International Associated Researcher, Project P11-TIC-7070 "Tecnologías Avanzadas de Conversión Electrónica de Potencia y Estrategias de Operación para la Integración de Energías Renovables (ARES)", Proyectos de Excelencia de la Junta de Andalucía, España, March 2013 – September 2017.

[20] International Associated Researcher, Project ENE2012-36897 "Sistemas Híbridos Distribuidos de Conversión y Almacenamiento de Energía Fotovoltaica", Proyecto Plan Nacional I+D del 2012, España, January 2013 – December 2015.

[21] Principal Investigator, FONDECYT project no. 1110783, "Multilevel Multi-string Topologies for Large Scale Grid Connected Photovoltaic Energy Conversion Systems". Period: March 2011 – March 2013.

[22] Associated Researcher, 2^{nd} National Program For Basal Funding of Science and Technology Centers of Excellence (CONICYT), project no. FB0821, "Valparaiso Center For Science And Technology (CCTVal)". Period: March 2009 – October 2014.

[23] Principal Investigator, FONDECYT project no. 1080582, "Multilevel Converter Interfaces for Photovoltaic and Wind Power Conversion Systems". Period: March 2008 – March 1010.

[24] Principal Investigator, FONDECYT project no. 1060423, "Advanced Control Techniques for Performance Improvements of Multilevel Converters for High Power Applications". Period: March 2006 – March 2008.

[25] Young Researcher, Scientific Millennium Nucleus on Industrial Electronics and Mechatronics (NEIM), project no. P04-048-F, of the Millennium Science Initiative (ICM-Mideplan). Period: October 2005 – October 2008.

[26] Principal Investigator, FONDECYT project no. 1040183, "Direct Torque Control of Multilevel Converter Fed Induction Motors". Period: March 2004 – March 2006.

[27] Principal Investigator, UTFSM project no. 23.12.15, "Wind Energy Conversion Systems based on Open-End Winding Permanent Magnet Synchronous Generators". Period 2012.

Industry and Public Sector

[28] Role/Activity: Senior R&D scientist. Company: TMEIC Japan. Project title: "Dynamic Evaluation of Photovoltaic-ESS Impact in Mining Power System". Period: Feb. 2018–May. 2018.

[29] Role/activity: National Expert. Organization: Ministry of Energy. Project title: "Technological prospecting in the energy sector - Electromobility". Period: Nov. 2017–Jan. 2018.

[30] Role/Activity: Senior R&D scientist. Company: TMEIC Japan. Project title: "Estudios Asociados a Comportamiento Harmónico del Convertidor Samurai". Period: Jun. 2016–Mar. 2017.

[31] Role/Activity: Consultant. Company: Ministerio de Energia. Project title: "Estudio de protecciones asociadas a la instalación de sistemas fotovoltaicos para instalaciones industrial/residencia asociadas a la ley net billing 20571". Period: Jun.–Dec. 2016.

[32] Role/Activity: Senior R&D scientist. Company: Phineal. Project title: "Desarrollo de inversor y sistema almacenamiento para auto eléctrico". Period: Jul. 2015–Dec. 2017.

[33] Role/Activity: Consultant. Company: ADROX. Project title: "Mejora significativa del producto Adrox como nanorecubrimiento industrial de protección para materiales y equipamiento eléctrico/electrónico en segmento de distribución electrica". Period: Sep. 2015–Mar. 2016.

[34] Role/Activity: Senior R&D scientist. Company: Axys Technologies. Project name: "Empaquetamiento inversor fotovoltaico". Period: Mar.–Nov. 2016.

[35] Role/Activity: Consultant. Company: Nanodepot. Project name: "Evaluación preliminar de producto hidrofóbico nanotecnologico para recubrimiento de paneles fotovoltaicos". Period: Sep. 2015–Mar. 2016.

[36] Role/Activity: Consultant. Company: ADROX. Project name: "Protocolo de pruebas en laboratorio para verificar el desempeño del producto adrox". Period: May–Nov. 2015.

[37] Role/Activiy: Senior R&D scientist. Company: Phineal. Project name: "Desarrollo de inversor para auto eléctrico". Period: May 2015–Dec. 2016.

[38] Role/Activity: R&D Engineer. Company: Rockwell Automation. Project Name: "Development of a new medium voltage multilevel inverter". Period: Jan.–Apr. 2011.

Books & Book Chapters

[1] V. Yaramasu, S. Kouro, A. Dekka, S. Alepuz, J. Rodriguez and M. Duran, "Advanced Control and Optimization Paradigms for Wind Energy Systems – Chapter: Power Conversion and Predictive Control of Wind Energy Conversion Systems", Springer, 2019.

[2] S. Rivera, R. Lizana, S. Kouroand B. Wu, "DC distribution Systems and Microgrids – Chapter 10: Bipolar-type DC microgrids for high-quality power distribution", First Edition, IET, in press, 2018.

[3] S. Rivera, S. Kouro, B. Wu, "Technologies and Applications for Smart Charging of Electric and Plug-in Hybrid Vehicles – Chapter 4: Charging architectures for electric and plug-in hybrid vehicles", Springer, 2017.

[4] S. Kouro, B. Wu, H. Abu-Rub and F. Blaabjerg. "Power Electronics for Renewable Energy Systems, Transportation, and Industrial Applications – Chapter 7: Photovoltaic energy conversion systems". First Edition, John Wiley & Sons, 2014.

[5] J. Rodriguez, H. Abu-Rub, M. Perez and S. Kouro."Advanced and Intelligent Control in Power Electronics and Drives – Chapter 6: Application of Predictive Control in Power Electronics: An AC-DC-AC Converter System". First edition, Springer, 2014.

[6] B. Wu, Y. Lang, N. Zargari and S. Kouro. "Power Conversion and Control of Wind Energy Systems". Wiley-IEEE Press, First Edition, ISBN 978-0-470-59365-3, July 5, 2011. (Also available in Chinese and Persian)

[7] S. Kouro, J. I. León, L. G. Franquelo, J. Rodríguez and B. Wu. "The Industrial Electronics Handbook – Vol. 3: Power Electronics and Motor Drives, Chapter 14: DC–AC Converters". CRC press, Second Edition, ISBN 978-1-4398-0285-4, March 2, 2011.

[8] J. Rodríguez, P. Lezana, S. Kouro, and A. Weinstein. "Power Electronics Handbook, Chapter 11: Single-Phase Controlled Rectifiers". Butterworth-Heinemann, Third Edition, ISBN 978-0-12-382036-5, December 9, 2010.

Patents

- J. Zapata, M. Perez, y S. Kouro, "A partial power converter (PPC) in an electric power system", Chilean Patent 2155-2018, PCT/CL2017/050044, 2018 (solicitada).
- S. Kouro and H. Renaudineau, "Microinversor submodular en cascada operado con unfolding", Chilean Patent, under evaluation, May 2017.
- M. Norambuena, J. Rodriguez, and S. Kouro, "Convertidor Multinivel para el Control y Transmisión de la Eergía Eléctrica," Chilean Patent Req. 201 602 365, Sep. 20, 2016.

Spin-off companies

- Sun and Play, established in 2017.

Publications in Journals

[1] D. Vinnikov, A. Chub, O. Korkh, E. Liivik, F. Blaabjerg, and S. Kouro, "MPPT Performance Enhancement of Low-Cost PV Microconverters", Solar Energy, Elsevier, Vol. 187, pp. 156–166, July 2019.

[2] N. Muller, S. Kouro, P. Zanchetta, P. Wheeler, G. Bittner and F. Girardi, "Energy Storage Sizing Strategy for Grid-Tied PV Plants Under Power Clipping Limitations", Energies, Vol. 12, No. 9, article 1812, 2019.

[3] C. Verdugo, S. Kouro, C. Rojas, M. Perez, T. Meynard, and M. Malinowski, “Five-Level T-type Cascade Converter for Rooftop Grid-Connected Photovoltaic Systems”, Energies, Vol. 12, No. 9, article 1743, 2019.

[4] J. Zapata, S. Kouro, G. Carrasco and T. Meynard, “Step-Down Partial Power DC-DC Converters for Two-Stage Photovoltaic String Inverters”, Electronics, Vol. 8, no. 1, article 87, 2019.

[5] G. Spagnuolo, S. Kouro and D. Vinnikov,“Photovoltaic Module and Submodule Level Power Electronics and Control”, IEEE Transactions on Industrial Electronics, Vol. 66, No. 5, pp. 3856–3859, May 2019.

[6] J. W. Zapata, S. Kouro, G. Carrasco, H. Renaudineau and T. A. Meynard, “Analysis of Partial Power DC-DC Converters for Two-Stage Photovoltaic Systems,” IEEE Journal of Emerging and Selected Topics in Power Electronics, Vol. 7, No. 1, pp. 591–603, March 2019.

[7] M. Aguirre, S. Kouro, C. Rojas, J. Rodriguez, J. Leon, “Switching Frequency Regulation for FCS-MPC Based on a Period Control Approach”, IEEE Transactions on Industrial Electronics, Vol. 65, No. 7, pp. 5764–5773, July 2018.

[8] M. Norambuena, S. Kouro, S. Dieckerhoff, and J. Rodriguez. “Reduced Multilevel Converter: A Novel Multilevel Converter with a Reduced Number of Active Switches”, IEEE Transactions on Industrial Electronics, Vol. 65, No. 5, pp. 3636–3645, May 2018.

[9] J. Zapata, S. Kouro, G. Carrasco and H. Renaudineau, “Step-Up Partial Power DC-DC Converters for Two-Stage PV Systems with Interleaved Current Performance”, Energies, Vol. 11, No. 2, Feb. 2018.

[10] C. A. Rojas, S. Kouro, M. A. Perez, and J. Echeverria. “DC-DC MMC for HVDC Grid Interface of Utility-Scale Photovoltaic Conversion Systems”, IEEE Transactions on Industrial Electronics, Vol. 65, No. 1, pp. 352–362, Jan. 2018.

[11] C. Rojas, M. Aguirre, S. Kouro, T. Geyer, E. Gutierrez, “Leakage Current Mitigation in Photovoltaic String Inverter Using Predictive Control With Fixed Average Switching Frequency”, IEEE Transactions on Industrial Electronics, Vol. 64, No. 12, pp. 9344–9354, Dec. 2017.

[12] O. Menendez, F. Auat, M. Perez and S. Kouro. “Robotics in Power Systems: Enabling a More Reliable and Safe Grid”, IEEE Industrial Electronics Magazine, Vol. 11, No. 2, pp. 22–34, Jun. 2017.

[13] C. Capasso, S. Riviera, S. Kouro, O. Veneri. “Charging Architectures Integrated with Distributed Energy Resources for Sustainable Mobility”, Energy Procedia, Vol. 105, pp. 2317–2322, May 2017.

[14] V. Yaramasu, A. R. Dekka, M. Durán, S. Kouroand Bin Wu. “PMSG-based wind energy conversion systems: survey on power converters and controls”, IET Electric Power Applications, Vol. 11, No. 6, pp. 956–968, 2017.

[15] M. J. Duran, S. Kouro, V. Yaramasu, “Guest Editorial: Advances in Multi-MW Wind Energy Conversion Systems”, IET Electric Power Applications, Vol. 11, No. 6, pp. 953–955, 2017.

[16] J. Guerrero, A. Davoudi, M. Belkhayat, M. H. Benbouzid, K. A. Corzine, A. M. Cramer, R. Dougal, S. Gamini, Y. Khersonsky, S. Kouro, M. Molinas, A. Monti, Y. Tang, D. Opila, E. Hennie, A. J. Sorensen, G. Sulligoi, S. D. Sudhoff, K. Sun, T. Tarasiuk, “Guest Editorial Energy Conversion in Next-generation Electric Ships”, IEEE Transactions on Energy Conversion, Vol. 32, No. 2, pp. 735–736, 2017.

[17] A. Marquez, J. I. Leon, S. Vazquez, R. Portillo, L. G. Franquelo, E. Freire, S. Kouro “Variable-Angle Phase-Shifted PWM for Multilevel Three-Cell Cascaded H-Bridge Converters”, IEEE Transactions on Industrial Electronics, Vol. 64, No. 5, pp. 3619–3628, May 2017.

[18] C. Rojas, J. Rodriguez, S. Kouroand F. Villaroel, “Multiobjective Fuzzy-Decision-Making Predictive Torque Control for an Induction Motor Drive”, IEEE Transactions on Power Electronics, Vol. 32, No. 8, pp. 6245–6260, Aug. 2017.

[19] N. Muller, S. Kouro, M. Malinowski, C. Rojas, M. Jasinski, G. Estay, "Medium-Voltage Power Converter Interface for Multigenerator Marine Energy Conversion Systems", IEEE Transactions on Industrial Electronics, Vol. 64, No. 2, pp. 1061–1070, Feb. 2017.

[20] C. Fuentes, C. Rojas, H. Renaudineau, S. Kouro, M. Perez, and T. Meynard, "Experimental Validation of a Single DC Bus Cascaded H-Bridge Multilevel Inverter for Multistring Photovoltaic Systems", IEEE Transactions on Industrial Electronics, Vol. 64, No. 2, pp. 930–934, Feb. 2017.

[21] J. I. Leon, S. Kouro, L. G. Franquelo, J. Rodriguez, "The Essential Role and the Continuous Evolution of Modulation Techniques for Voltage Source Inverters in Past, Present and Future Power Electronics". IEEE Transaction on Industrial Electronics, Vol. 63, No. 5, pp. 2688–2701, May 2016.

[22] J. Muñoz-Cruzado-Alba, C. A. Rojas, S. Kouroand E. Galván. "Power Production Losses Study by Frequency Regulation in Weak-Grid-Connected Utility-Scale Photovoltaic Plants", Energies, Vol. 9, No. 5, 317, April 2016.

[23] S. Kouro, M. Perez, J. Rodriguez, A. Llor and H. Young. "Model Predictive Control: MPC's Role in the Evolution of Power Electronics", IEEE Industrial Electronics Magazine, Vol. 9, No. 4, pp. 8–21, December 2015.

[24] J. Zapata, M. Perez, S. Kouro, A. Lensu, A. Suuronen, "Design of a Cleaning Program for a PV Plant Based on Analysis of Energy Losses", IEEE Journal of Photovoltaics, Vol. 5, No. 6, pp. 1748–1756, Nov. 2015.

[25] V. Yaramasu, B. Wu, M. Rivera, M. Narimani, S. Kouroand J. Rodriguez, "Generalised approach for predictive control with common-mode voltage mitigation in multilevel diode-clamped converters", IET Power Electronics, Vol. 8, No. 8, pp. 1440–1450, August 2015.

[26] V. Yaramasu, B. Wu, P. C. Sen, S. Kouroand M. Narimani. "High-Power Wind Energy Conversion Systems: State-of-the-Art and Emerging Technologies". Proceedings of the IEEE, Vol. 103, No. 5, pp. 740–788, May 2015.

[27] S. Rivera, B. Wu, S. Kouro, V. Yaramasu and J. Wang. "Electric Vehicle Charging Station using a Neutral Point Clamped Converter with Bipolar DC Bus". IEEE Transaction on Industrial Electronics, Vol. 62, No. 4, pp. 1999–2009, 2015.

[28] S. Kouro, J. I. Leon, D. Vinnikov, L. G. Franquelo, "Grid-Connected Photovoltaic Systems: An Overview of Recent Research and Emerging PV Converter Technology", IEEE Industrial Electronics Magazine, Vol. 9, No. 1, pp. 47–61, March 2015.

[29] M. Perez, S. Bernet, J. Rodriguez and S. Kouro, "Editorial Special Issue on Modular Multilevel Converters," IEEE Transactions on Power Electronics, Vol.30, No.1, pp. 1–3, Januray 2015.

[30] M. Perez, S. Bernet, J. Rodriguez, S. Kouroand R. Lizana. "Circuit Topologies, Modeling, Control Schemes, and Applications of Modular Multilevel Converters", IEEE Transactions on Power Electronics. Vol. 30, No. 1, pp. 4–17, January 2015.

[31] V. Yaramasu, B. Wu, S. Alepuz and S. Kouro. "Predictive Control for Low-Voltage Ride-Through Enhancement of Three-Level-Boost and NPC-Converter-Based PMSG Wind Turbine". IEEE Transactions on Industrial Electronics, vol. 61, no. 12, pp. 6832–6843, December 2014.

[32] S. Rivera, S. Kouro, B. Wu, S. Alepuz, M. Malinowski, P. Cortes and J. Rodriguez. "Multilevel Direct Power Control – A Generalized Approach for Grid-Tied Multilevel Converter Applications". IEEE Transactions on Power Electronics, vol. 29, no. 10, pp. 5592–5604, October 2014.

[33] S. Alepuz, A. Calle, S. Busquets-Monge, S. Kouro, and B. Wu. "Use of Stored Energy in PMSG Rotor Inertia for Low Voltage Ride-Through in Back-to-back NPC Converter Based Wind Power Systems", IEEE Transactions on Industrial Electronics, vol. 60, no. 5, pp. 1787-1796, May 2013.

[34] J. Leon, L. Franquelo, B. Wu, S. Kouro. "Introduction to the Special Section on Modulation Techniques for DC-to-AC Power Converters," IEEE Transactions on Industrial Electronics, vol. 60, no. 5, pp. 1859–1860, May 2013.

[35] S. Kouro, J. Rodriguez, B. Wu, S. Bernet, M. Perez. "Powering the Future of Industry: High-Power Adjustable Speed Drive Topologies". IEEE Industry Applications Magazine, vol. 18, no. 4, pp.26–39, July-Aug 2012.

[36] A. Yafaoui, B. Wu, and S. Kouro. "Improved Active Frequency Drift Anti-islanding Detection Method for Grid Connected Photovoltaic System". IEEE Transactions on Power Electronics, vol. 27, no. 5, pp. 2367–2375, May, 2012.

[37] S. Kouro, J. Dai and B. Wu. "Current Source Converter Based Wind Energy Conversion Systems", Power Electronics, China, vol. 45, no. 8, pp. 3–10, Aug. 2011.

[38] J. I. Leon, S. Kouro, S. Vazquez, R. Portillo, L. G. Franquelo, J. M. Carrasco and J. Rodriguez. "Multidimensional Modulation Technique for Cascaded Multilevel Converters". IEEE Transactions on Industrial Electronics, vol. 58, no. 2, pp. 412–420, February 2011.

[39] S. Kouro, M. Malinowski, K. Gopakumar, J. Pou, L. G. Franquelo, B. Wu, J. Rodríguez, M. Pérez and J. I. León. "Recent Advances and Industrial Applications of Multilevel Converters". IEEE Transactions on Industrial Electronics, vol. 57, no. 8, pp. 2553–2580, August 2010.

[40] P. Cortés, A. Wilson, S. Kouro, J. Rodríguez and H. Abu-Rub. "Model Predictive Control of Multilevel Cascaded H-Bridge Inverters". IEEE Transactions on Industrial Electronics, vol. 57, no. 8, pp. 2691–2699, August 2010.

[41] J. Rodríguez, L. G. Franquelo, S. Kouro, J. I. León, M. Pérez, R. Portillo and M. A. Prats. "Multilevel Converters: an Enabling Technology for High Power Applications". Proceedings of the IEEE, vol. 97, no. 11, pp. 1786–1817, November 2009.

[42] J. I. Leon, S Vazquez, S. Kouro, L. G. Franquelo, J. M. Carrasco, J. Rodríguez, "Unidimensional Modulation Technique for Cascaded Multilevel Converters". IEEE Trans. on Industrial Electronics, vol. 56, no. 8, pp. 2981–2986, August 2009.

[43] S. Kouro, P. Cortes, R. Vargas, U. Ammann, J. Rodriguez. "Model Predictive Control–A Simple and Powerful Method to Control Power Converters". IEEE Transactions on Industrial Electronics, vol. 56, no. 6, pp. 1826–1838, June 2009.

[44] B. Wu, J. Pontt, J. Rodríguez, S. Bernet, and S. Kouro. "Current Source Converter and Cycloconverter Topologies for Industrial Medium Voltage Drives". IEEE Transactions on Industrial Electronics, vol. 55, no. 7, pp. 2786–2797, July 2008.

[45] L. Franquelo, J. Rodríguez, J. I. León, S. Kouro, R. Portillo and M. A. Prats. "The Age of Multilevel Converters Arrives". IEEE Industrial Electronics Magazine, vol. 2, no. 2, pp. 28–39, June 2008.

[46] S. Kouro, P. Lezana, M. Angulo and J. Rodríguez. "Multicarrier PWM With DC-Link Ripple Feedforward Compensation for Multilevel Inverters". IEEE Transactions on Power Electronics, vol. 23, no. 1, pp. 52–59, January 2008.

[47] J. Rodríguez, B. Wu, S. Bernet, J. Pontt and S. Kouro. "Multilevel Voltage-Source-Converter Topologies for Industrial Medium-Voltage Drives". IEEE Transactions on Industrial Electronics, Special Section on High Power Drives, vol. 54, no. 6, pp. 2930–2945, December 2007.

[48] S. Kouro, R. Bernal, H. Miranda, C. Silva, J. Rodríguez. "High performance torque and Flux control for multilevel inverter fed induction motors". IEEE Transactions on Power Electronics, vol. 22, no. 6, pp. 2116–2123, November 2007.

[49] S. Kouro, J. Rebolledo and J. Rodríguez. "Reduced Switching Frequency Modulation Algorithm for High Power Multilevel Inverters". IEEE Transactions on Industrial Electronics, vol. 54, no. 5, pp. 2894–2901, October 2007.

[50] J. Rodríguez, J. Pontt, C. Silva, E. Wiechmann, P. Hammond, F. Santucci, R. Álvarez, R. Musalem, S. Kouro, and P. Lezana. "Large current rectifiers: State of the art and future trends". IEEE Transactions on Industrial Electronics, Special Section on Modern Rectifiers, Vol. 52, No. 3, pp. 738–746 , June 2005.

[51] J. Rodríguez, J. Pontt, R. Huerta, G. Alzamora, N. Becker, S. Kouro, P. Cortés and P. Lezana. "Resonances in a High Power Active Front End Rectifier System". IEEE Transactions on Industrial Electronics, Special Section on Modern Rectifiers, vol. 52, no. 2, pp. 482–488, April 2005.

[52] J. Rodríguez, J. Pontt, C. Silva, S. Kouro, A. Liendo and J. Rebolledo. "Hysteresis current control of a vector controlled induction motor and DTC: an assessment". International Journal of Electronics, vol. 91, no. 11, pp. 639–651, November 2004.

[53] J. Rodríguez, J. Pontt, S. Kouro, and P. Correa. "Direct Torque Control with Imposed Switching Frequency and Torque Ripple Minimization in an 11-Level Cascaded Inverter". IEEE Transactions on Industrial Electronics, Special Section on DTC, vol. 51, no. 4, pp. 827–833, August 2004.

[54] J. Rodríguez, L. Morán, J. Pontt, R. Osorio and S. Kouro. "Modeling and Analysis of Common-Mode Voltages Generated in Medium Voltage PWM-CSI Drives". IEEE Transactions on Power Electronics, vol. 18, no. 3, pp. 873–879, May 2003.

Publications in Conference Proceedings

[1] N. Muller, S. Kouro, P. Zanchetta, P. Wheeler, and A. Marzo, "Wavelet-based ESS sizing strategy to enable peak-shaving in PV systems", 28th International Symposium on Industrial Electronics (ISIE 2019), Vancouver, Canada, 12–14 June, 2019.

[2] D. Vinnikov, A. Chub, O. Korkh, S. Kouro, "Wide Input Voltage Range High Step-Up DC-DC Converter with Fault-Tolerant Operation Capability", 20th IEEE International Conference on Industrial Technology (ICIT 2019), Melbourne, Australia, 13-15 Feb., 2019.

[3] A. Chub, D. Vinnicov, E. Babaei, E. Liivik, O. Korkh, S. Kouro, "Single-Switch Impedance-Source Galvanically Isolated DC-DC Converter with Combined Energy Transfer" 2018 IEEE 59th International Scientific Conference on Power and Electrical Engineering of Riga Technical University (RTUCON2018), Riga, Latvia, 12-14 Nov., 2018.

[4] M. Lopez, M. Perez, S. Kouro, "Current Control of Interleaved DC-DC Converter in Continuous and Discontinuous Mode", 5th International Conference on Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles and International Transportation Electrification Conference (ESARS-ITEC 2018), Nottingham, United Kingdom, 7-9 Nov., 2018.

[5] M. Reyes, J. Espinoza, L. Moran S. Kouro, "PV Farm Operation with Independent Reactive Power Compensation Regardless of the Active Power Level Generation", 44rd Annual Conference of IEEE Industrial Electronics Society (IECON 2018), Washington DC, USA, Oct. 21-23, 2018.

[6] D. Lopez, S. Kouro, F. Flores-Bahamonde, R. Hernandez, "Unfolding PV Microinverter Current Control: Rectified Sinusoidal vs Sinusoidal Reference Waveform", Tenth Annual IEEE Energy Conversion Congress and Exposition (ECCE 2018), Portland, Oregon, USA, Sept. 23-27, 2018.

[7] S. Rivera, D. Pesantez, S. Kouro, P. Lehn, "Pseudo-Partial-Power Converter without High Frequency Transformer for Electric Vehicle Fast Charging Stations", Tenth Annual IEEE Energy Conversion Congress and Exposition (ECCE 2018), Portland, Oregon, USA, Sept. 23–27, 2018.

[8] D. Vinnikov, A. Chub, E. Liivik, F. Blaabjerg, S. Kouro, "Maximizing Energy Harvest of the Impedance Source PV Microconverter under Partial Shading Conditions", IEEE 12th International Conference on Compatibility, Power Electronics, and Power Engineering (CPE-POWERENG 2018), Doha, Qatar, 10-12 April, 2018.

[9] N. Muller, S. Kouro, P. Zanchetta, and P. Wheeler, "Bidirectional Partial Power Converter Interface for Energy Storage Systems to Provide Peak Shaving in Grid-Tied PV Plants", IEEE International Conference on Industrial Technology (ICIT 2018), Lyon, France, 20-22 February, 2018.

[10] Q. Surirey, R. Hernandez-Vidal, H. Renaudineau, S. Kouroand B. Cabon, "Sub-Module Photovoltaic Microinverter with Cascaded Push-Pull and Unfolding H-bridge Inverter", 3rd Annual Southern Power Electronics Conference (SPEC 2017), Puerto Varas, Chile, 4-7 December, 2017.

[11] H. Renaudineau, M. Aguirre, and S. Kouro, “Single-phase dual-mode time-sharing PV string inverter”, 3rd Annual Southern Power Electronics Conference (SPEC 2017), Puerto Varas, Chile, 4-7 December, 2017.

[12] C. Rojas, S. Kouro, R. Inzunza, K. Okuno and Y. Mitsugi, “Impedance Norton Modelling of Utility-Interactive Multilevel Photovoltaic Systems”, 3rd Annual Southern Power Electronics Conference (SPEC 2017), Puerto Varas, Chile, 4-7 December, 2017.

[13] C. Rojas, S. Kouro, R. Inzunza, K. Okuno and Y. Mitsugi, “Harmonic Interaction Modelling of Multiple Utility-Interactive Multilevel Photovoltaic Systems”, 3rd Annual Southern Power Electronics Conference (SPEC 2017), Puerto Varas, Chile, 4-7 December, 2017.

[14] J. Zapata, S. Kouroand M. Perez. “Partial Power Converter for a Two-Stage Photovoltaic Cascaded String Inverter”, 43rd Annual Conference of IEEE Industrial Electronics Society (IECON 2017), Beijing, China, Oct. 29 - Nov. 1, 2017.

[15] J. Rojas, H. Renaudineau, S. Kouroand S. Rivera. “Partial Power DC-DC Converter for Electric Vehicle Fast Charging Stations”, 43rd Annual Conference of IEEE Industrial Electronics Society (IECON 2017), Beijing, China, Oct. 29 - Nov. 1, 2017.

[16] R. Hernandez-Vidal, Q. Surirey, H. Renaudineau, S. Kouroand B. Cabon. “Push-pull based pseudo DC-link PV microinverter”, 43rd Annual Conference of IEEE Industrial Electronics Society (IECON 2017), Beijing, China, Oct. 29 - Nov. 1, 2017.

[17] C. Reusser, S. Kouro, M. Perez, “Circulating current control scheme for double-star winding induction motor drive based, ship propulsion system”, 43rd Annual Conference of IEEE Industrial Electronics Society (IECON 2017), Beijing, China, Oct. 29 - Nov. 1, 2017.

[18] A. Marquez, J. Leon, S. Vazquez, L. Franquelo and S. Kouro. “Operation of an Hybrid PV-Battery System with Improved Harmonic Performance”, 43rd Annual Conference of IEEE Industrial Electronics Society (IECON 2017), Beijing, China, Oct. 29 - Nov. 1, 2017.

[19] W. Flores-Guerrero, H. Renaudineau and S. Kouro, “Microinverter based on series connected submodular photovoltaic power cells”, IEEE Chilecon 2017, Pucon, Chile, 18-20 October, 2017.

[20] H. Renaudineau, S. Rivera and S. Kouro, “Portrait vs landscape layout of PV modules impact on generation in heavy soiling areas”, 3rd Solar Energy Forum (ENERSOL 2017), Antofagasta, Chile, 5-6 October, 2017.

[21] H. Renaudineau, A. Llor, J. Zapata and S. Kouro, “Photovoltaic partial power DC-DC converter for direct power interface to copper electrorefining process”, 3rd Solar Energy Forum (ENERSOL 2017), Antofagasta, Chile, 5-6 October, 2017.

[22] M. Norambuena, J. Rodriguez, S. Kouroand A. Rathore. “A Novel Multilevel Converter with Reduced Switch Count for low and medium voltage applications”, 2017 IEEE Energy Conversion Congress and Exposition (ECCE 2017), Cincinnati, OH, USA, October 1-5, 2017.

[23] S. Rivera, S. Kouro, A. Llor, C. Reusser “Four-level double star multilevel converter for grid-connected photovoltaic systems”, 19th Conference on Power Electronics and Applications (EPE 2017 ECCE-Europe), Warsaw, Poland, September 11-14, 2017.

[24] D. Lopez, F. Flores-Bahamonde, H. Reneaudineau, and S. Kouro. “Evaluation of Photovoltaic Microinverter configurations based on different converter stages and step-up voltage ratios”, 19th Conference on Power Electronics and Applications (EPE 2017 ECCE-Europe), Warsaw, Poland, September 11-14, 2017.

[25] R. Hernandez, H. Reneaudineau and S. Kouro, “Sub-Module PV Microinverter with Cascaded Flybacks and Unfolding H-bridge”, IEEE 26th International Symposium on Industrial Electronics (ISIE 2017), Edinburgh, Scotland, 19-21 June, 2017.

[26] J. W. Zapata, T. A. Meynard, and S. Kouro.“Multi-Channel Partial Power DC-DC Converter for Current Balancing of LED strings”, IEEE 26th International Symposium on Industrial Electronics (ISIE 2017), Edinburgh, Scotland, 19-21 June, 2017.

[27] N. Muller, H. Reneaudineau and S. Kouro, "Ultracapacitor storage enabled global MPPT for photovoltaic central inverters", IEEE 26th International Symposium on Industrial Electronics (ISIE 2017), Edinburgh, Scotland, 19-21 June, 2017.

[28] C. Reusser, S. Kouro, A. Llor, R. Cardenas and V. Yaramasu, "Permanent Magnet Synchronous Generator WECS Based on a Four-level Double Star Converter", IEEE 8th International Symposium on Power Electronics for Distributed Generation Systems (PEDG 2017), Florianópolis, Brazil, 17-20 April, 2017.

[29] H. Renaudineau, D. Lopez, F. Flores-bahamonde and S. Kouro, "Flatness-based control of a boost inverter for PV microinverter application", IEEE 8th International Symposium on Power Electronics for Distributed Generation Systems (PEDG 2017), Florianópolis, Brazil, 17-20 April, 2017.

[30] A. Marquez, J. I. Leon, S. Vazquez, L. G. Franquelo and S. Kouro, "Adaptive Phase-Shifted PWM for Multilevel Cascaded H-bridge Converters with Large Number of Power Cells", IEEE 11th International Conference on Compatibility, Power Electronics and Power Engineering (IEEE CPE-POWERENG 2017), Cadiz, Spain, April 4-6, 2017.

[31] C. D. Fuentes, H. Renaudineau, S. Kouroand S. Bernet, "Power density driven design methodology of power converters for photovoltaic applications", IEEE International Conference on Industrial Technology (ICIT 2017), Toronto, Canada, March 22-25, 2017.

[32] A. Llor, M. Perez, and S. Kouro, "Operating Region of a Three-Phase Quasi-Z-Source Inverter", IEEE International Conference on Industrial Technology (ICIT 2017), Toronto, Canada, March 22-25, 2017.

[33] D. Lopez, F. Flores-Bahamonde, H. Renaudineau and S. Kouro, "Double Voltage Step-up Photovoltaic Microinverter", IEEE International Conference on Industrial Technology (ICIT 2017), Toronto, Canada, March 22-25, 2017.

[34] A. Llor, S. Kouro, C. Reusser, V. Yaramasu and B. Wu, "Medium Voltage 4-level Double-Star Multilevel Converter Using Model Predictive Control", IEEE International Conference on Industrial Technology (ICIT 2017), Toronto, Canada, March 22-25, 2017.

[35] N. Muller, S. Kouro, H. Renaudineau, P. Wheeler, "Energy storage system for global maximum power point tracking on central inverter PV plants", IEEE Southern Power Electronic Conference, SPEC 2016, Auckland, New Zealand, 5-8 December, 2016.

[36] J. Zapata, T. Meynard, S. Kouro, "Partial Power DC-DC Converter for Large-Scale Photovoltaic Systems", IEEE Southern Power Electronic Conference, SPEC 2016, Auckland, New Zealand, 5-8 December, 2016.

[37] D. Lopez, F. Flores, S. Kouro, M. Perez, A. Llor, L. Martinez, "Predictive Control of a Single-Stage Boost DC-AC Photovoltaic Microinverter", 42nd Annual Conference of IEEE Industrial Electronics Society (IECON 2016), Florence, Italy, October 24-27, 2016.

[38] J. Zapata, H. Renaudineau, S. Kouro, M. Perez, and T. Meynard, "Partial Power DC-DC Converter for Photovoltaic Microinverters", 42nd Annual Conference of IEEE Industrial Electronics Society (IECON 2016), Florence, Italy, October 24-27, 2016.

[39] M. Aguirre, C. Rojas, S. Kouro, "Cascade-Free Model Predictive Control of a Grid-Tie Multilevel Photovoltaic System", 42nd Annual Conference of IEEE Industrial Electronics Society (IECON 2016), Florence, Italy, October 24-27, 2016.

[40] C. Capasso, S. Riviera, S. Kouro, O. Veneri, "Charging architectures integrated with distributed energy resources for the electric sustainable mobility", International Conference on Applied Energy (ICAE 2016), Beijing, China, 8-11 October, 2016.

[41] P. Castillo, N. Muller-Pollmann, S. Kouroand C. A. Rojas, "Integration of photovoltaic power directly in the copper electrolysis process", 3rd International Seminar on Energy Management in Mining (ENERMIN 2016), Santiago, Chile, 24–26 de Agosto, 2016.

[42] W. Flores-Guerrero, H. Renaudineau and S. Kouro, “Cascaded H-bridges for Sub-Module PV Microinverter”, IEEE International Symposium on Industrial Electronics (ISIE 2016), Santa Clara, CA, USA, pp. 556–561, June 8-10, 2016.

[43] H. Renaudineau, S. Kouro, K. Schaible and M. Zehelein, “Flyback-based Sub-Module PV Microinverter”, 18th European Conference on Power Electronics and Applications, (EPE - ECCE 2016), Karlsruhe, Germany, 6 - 8 September, 2016.

[44] A. Morrison, J. W. Zapata, S. Kouro, M. A. Perez, T. Meynard and H. Renaudineau, “Partial Power DC-DC Converter for two-stage photovoltaic string inverters”, IEEE Energy Conversion Congress and Exposition (ECCE 2016), Milwaukee, USA, 18-22 September, 2016.

[45] C. Rojas, S. Kouro, M. Perez, F. Villaroel, “Multiobjective Fuzzy Predictive Torque Control of an induction machine fed by a 3L-NPC inverter”, 2015 IEEE International Symposium on Predictive Control of Electrical Drives and Power Electronics (PRECEDE 2015), Valparaiso, Chile, 5-6 October, 2015.

[46] J. Zapata, S. Kouro, T. Meynard, “Evaluation of output connections of interleaved dc-converter stage for photovoltaic ac-module configurations”, IEEE Southern Power Electronic Conference, SPEC 2015, Fortaleza, Brasil, Nov. 28 - Dic. 2, 2015.

[47] C. Reusser, S. Kouro, “Back-to-back Wind Energy Conversion System Configuration Based on 9-switch Dual Converter and open-end-winding PMSG”, IEEE Southern Power Electronic Conference, SPEC 2015, Fortaleza, Brasil, Nov. 28 - Dic. 2, 2015.

[48] P. Castillo, S. Kouro, C. Rojas, N. Muller, “Photovoltaic DC-DC Converter for Direct Power Interface to Copper Electrorefining Process”, 41st Annual Conference of IEEE Industrial Electronics Society (IECON 2015), Yokohama, Japan, Nov. 9-12, 2015.

[49] J. Zapata, S. Kouro, M. Aguirre, T. Meynard, “Model predictive control of interleaved dc-dc stage for photovoltaic microconverters”, 41st Annual Conference of IEEE Industrial Electronics Society (IECON 2015), Yokohama, Japan, Nov. 9-12, 2015.

[50] C. Reusser, S. Kouro, “Nine switch multi-channel dual converter for WECS”, 41st Annual Conference of IEEE Industrial Electronics Society (IECON 2015), Yokohama, Japan, Nov. 9-12, 2015.

[51] C. Garcia, S. Kouro, M. Norambuena, T. Meynard, J. Rodriguez, “Finite control set model predictive control of a Stacked Multicell Converter”,41st Annual Conference of IEEE Industrial Electronics Society (IECON 2015), Yokohama, Japan, Nov. 9-12, 2015.

[52] M. Norambuena, S. Kouro, S. Dieckerhoff, J. Rodriguez, “Finite Control Set Model Predictive Control of a Stacked Multicell Converter with Reduced Computational Cost”, 41st Annual Conference of IEEE Industrial Electronics Society (IECON 2015), Yokohama, Japan, Nov. 9-12, 2015.

[53] A. Marquez, J. Leon, S. Vazquez, L. Franquelo, S. Kouro, “Adaptive Phase-Shifted PWM for Multilevel Cascaded H-bridge Converters for Balanced or Unbalanced Operation”, 41st Annual Conference of IEEE Industrial Electronics Society (IECON 2015), Yokohama, Japan, Nov. 9-12, 2015.

[54] J. Zapata, M. Perez, S. Kouro. “Design of a cleaning program for a PV plant based on the analysis of short-term and long-term effects”, 41st Annual Conference of IEEE Industrial Electronics Society (IECON 2015), Yokohama, Japan, Nov. 9-12, 2015.

[55] E. Gutierrez, S. Kouro, C. Rojas and M. Aguirre, “Predictive Control of an H-NPC Converter for Single-phase Rooftop Photovoltaic Systems”, IEEE Energy Conversion Congress and Exposition (ECCE 2015), Montreal, Canada, 20-24 Sept. 2015.

[56] C. Reusser, S. Kouroand R. Cardenas, “Dual three-phase PMSG based Wind Energy Conversion System Using 9-switch Dual Converter”, IEEE Energy Conversion Congress and Exposition (ECCE 2015), Montreal, Canada, 20-24 Sept. 2015.

[57] C. Verdugo, S. Kouro, T. Meynard and C. Rojas,"Comparison of T-Type Multilevel Converters for Single-Phase Grid-Connected PV Systems", IEEE Energy Conversion Congress and Exposition (ECCE 2015), Montreal, Canada, 20-24 Sept. 2015.

[58] C. Rojas, S. Kouro, R. Ruiz, S. Rivera, B. Wu, X. Guo "Multiobjective Predictive Control of a three-phase seven-level cascaded H-bridge converter for grid-connected photovoltaic systems", IEEE International Symposium on Industrial Electronics (ISIE 2015), Rio de Janeiro, Brazil, 3-5 June, 2015.

[59] M. Aguirre, S. Kouro, J. Rodriguez, H. Abu-Rub, "Model Predictive Control of Interleaved Boost Converters for Synchronous Generator Wind Energy Conversion Systems", IEEE International Conference on Industrial Technology (ICIT 2015), Seville, Spain, 17-19 march, 2015.

[60] C. Rojas, S. Kouro, D. Edwards, B. Wu, S. Rivera, "Five-Level H-bridge NPC Central Photovoltaic Inverter with Open-End Winding Grid Connection", 40th Annual Conference of IEEE Industrial Electronics Society (IECON 2014), Dallas, USA, Oct. 29 - Nov. 1, 2014.

[61] N. Muller, S. Kouro, "Experimental and simulation results of multi-level converter interface alternatives for Wave Dragon Energy Conversion System", First Workshop on Wave and Tidal Energy (WTE'14), Valdivia, Chile, Oct. 29-31, 2014.

[62] S. Rivera, S. Kouro, B. Wu, "Distributed dc bus EV charging station using a single dc-link h-bridge multilevel converter". IEEE International Symposium on Industrial Electronics (ISIE 2014), pp. 1496–1501, Istanbul, Turkey, 1-4 June, 2014.

[63] M. Perez and S. Kouro. "Asymmetric Cascaded Converter for Solar PV Applications". IEEE International Symposium on Industrial Electronics (ISIE 2014), Istanbul, pp. 2484–2489, Turkey, 1-4 June, 2014.

[64] J. Echeverria, S. Kouro, M. Perez and H. Abu-Rub,"Multi-Modular Cascaded DC-DC Converter for HVDC Grid Connection of Large Scale Photovoltaic Systems", 39th Annual Conference of the IEEE Industrial Electronics Society (IECON 2013), Vienna, Austria, pp. 6999–7005, Nov. 10-13, 2013.

[65] C. Verdugo, S. Kouro, M. Malinowski, T. Meynard and M. Perez, "Series-connected T-type Inverters for single-phase grid-connected Photovoltaic Energy System", 39th Annual Conference of the IEEE Industrial Electronics Society (IECON 2013), Vienna, Austria, pp. 7021–7027, Nov. 10-13, 2013.

[66] S. Rivera, J. Wang, B. Wu, S. Kouro, and H. Athab, "NPC based Plug-in Electric Vehicle Charging Station using a Bipolar Distributed DC Bus", 39th Annual Conference of the IEEE Industrial Electronics Society (IECON 2013), Vienna, Austria, pp. 6219–6226, Nov. 10-13, 2013.

[67] P. Mlodzikowski, S. Stynski, M. Malinowski and S. Kouro, "Control of Simplified Multilevel AC-DC-AC Converter for Small Power Generation Systems", 39th Annual Conference of the IEEE Industrial Electronics Society (IECON 2013), Vienna, Austria, pp. 5951–5956, Nov. 10-13, 2013.

[68] N. Muller, S. Kouro, M. Malinowski, S. Rivera, B. Wu and J. Rodriguez,"Cascaded H-Bridge generator-grid interface for Wave Dragon wave energy conversion system", 39th Annual Conference of the IEEE Industrial Electronics Society (IECON 2013), Vienna, Austria, pp. 6201–6206, Nov. 10-13, 2013.

[69] M. Perez, D. Arancibia, S. Kouro, J. Rodriguez, "Modular Multilevel Converter with Integrated Storage for Solar PV Applications", 39th Annual Conference of the IEEE Industrial Electronics Society (IECON 2013), Vienna, Austria, pp. 6993–6998, Nov. 10-13, 2013.

[70] P. Zavala, M. Rivera, S. Kouro, J. Rodriguez, B. Wu, V. Yaramasu, C. Baier, J. Munoz, J. Espinoza, P. Melin, "Predictive control of a current source rectifier with imposed sinusoidal input currents," 39th Annual Conference of the IEEE Industrial Electronics Society (IECON 2013), pp.5842–5847, Vienna, Austria, Nov. 10-13, 2013.

[71] Nicolas Muller, S. Kouro, M. Malinowski and J. Glaría, "Medium-voltage power converter interface for Wave Dragon wave energy conversion system", IEEE Energy Conversion Congress and Exposition (ECCE 2013). Denver, USA, pp. 352–358, 15-19 Sept. 2013.

[72] S. Rivera, R. Lizana, S. Kouro, M. Perez, B. Wu and J. Rodriguez, "Modular Multilevel Converter for Large-scale Multistring Photovoltaic Energy Conversion System", IEEE Energy Conversion Congress and Exposition (ECCE 2013). Denver, USA, pp. 1941 – 1946, 15-19 Sept. 2013.

[73] S. Kouro. M. Perez, B. Wu, J. Rodriguez, "Four-Level Medium Voltage Multilevel Converter for High Power Applications", IEEE Energy Conversion Congress and Exposition Asia Down Under (ECCE Asia 2013), Melbourne, Australia, pp. 1028–1033, 3-6 June, 2013.

[74] M. Rivera, S. Kouro, J. rodriguez, V. Yaramasu, B. Wu, J. Espinoza, P. Melin, "Predictive Current Control in a Current Source Inverter Operating with Low Switching Frequency", International Conference on Power Engineering, Energy and Electrical Drives (POWERENG 2013), Istanbul, Turkey, 13-17 May, 2013.

[75] L. Vattuone, S. Kouro, G. Estay, B. Wu, "Open-end-winding PMSG for Wind Energy Conversion System With Dual Boost NPC Converter", IEEE International Conference on Industrial Technology (ICIT 2013), Cape Town, South Africa, 25-27 February, 2013.

[76] G. Estay, L. Vattuone, S. Kouro, M. Duran, B. Wu. "Dual-Boost-NPC Converter for a Dual Three-Phase PMSG Wind Energy Conversion System", IEEE International Conference on Power Electronics, Drives and Energy Systems 2012 (PEDES 2012), Bengaluru, India, 16-19 December 2012.

[77] S. Kouro, C. Fuentes, M. Perez and J. Rodriguez. "Single DC-link Cascaded H-bridge Multilevel Multistring Photovoltaic Energy Conversion System with Inherent Balanced Operation", 38th Annual Conference of the IEEE Industrial Electronics Society (IECON 2012), Montreal, Canada, 25-28 October 2012.

[78] M. Rivera, S. Kouro, J. rodriguez, B. Wu, J. Espinoza. "Predictive Control of a Current Source Converter Operating with Low Switching Frequency", 38th Annual Conference of the IEEE Industrial Electronics Society (IECON 2012), Montreal, Canada, 25-28 October 2012.

[79] S. Rivera, B. Wu, S. Kouro, H. Wang and D. Zhang,"Cascaded H-Bridge Multilevel Converter Topology and Three-phase Balance Control for Large Scale Photovoltaic Systems", 3rd International Symposium on Power Electronics for Distributed Generation Systems (PEDG 2012), Aalborg, Denmark, 25-28 June, 2012.

[80] P. Cortes, S. Kouro, F. Barrios and J. Rodriguez, "Predictive Control of a Single-phase Cascaded H-Bridge Photovoltaic Energy Conversion System", 7th International Power Electronics and Motion Control Conference (IPEMC2012), Harbin, China, June 2-5, 2012.

[81] H. Aggrawal, J. I. Leon, L. G. Franquelo, S. Kouro, P. Garg and J. Rodriguez,"Model Predictive Control Based Selective Harmonic Mitigation Technique for Multilevel Cascaded H-bridge Converters", 37th Annual Conference of the IEEE Industrial Electronics Society (IECON 2011), Melbourne, Australia, 7-10 November, 2011.

[82] B. Wu, Y.Q. Lang, N. Zargari and S. Kouro, "Modeling and Analysis of Doubly Fed Induction Generator based Wind Energy Systems", Power Electronics for Industrial Applications and Renewable Energy Conversion (PEIA 2011), Doha, Qatar, 3-4 Nov. 2011

[83] J. I. Leon, L. G. Franquelo, S. Kouro, Bin Wu and S. Vazquez, "Modulador Simple con Control del Equilibrio de Tensiones para un Convertidor Híbrido ANPC + Flying-capacitor de Cinco Niveles", Seminario Anual de Automática, Electrónica Industrial e Instrumentación SAAEI 2011, Badajoz, 6-8 July, 2011.

[84] S. Kouro, M. Duran, B. Wu, E. Levi, F. Barrero, S. Alepuz. "Six-phase PMSG wind energy conversion system based on medium-voltage multilevel converter". 14th European Conference on Power Electronics and Applications (EPE 2011), Birmingham, UK, 30 August - 1 September, 2011.

[85] J.I. Leon, L. G. Franquelo, S. Vazquez, S. Kouro, and B. Wu. "Novel Modulator for the Hybrid Two-cell Flying-Capacitor Based ANPC Converter". 3rd International Conference on Power Engineering, Energy and Electrical Drives (IEEE POWERENG 2011), Malaga, Spain, May 11-13, 2011.

[86] S. Rivera, S. Kouro, J. I. Leon, B. Wu, J. Rodríguez, L. G. Franquelo. "Cascaded H-Bridge Multilevel Converter Multistring Topology for Large Scale Photovoltaic Systems". 20th IEEE International Symposium on Industrial Electronics (ISIE 2011), Gdansk, Poland, 27-30 June, 2011.

[87] J.I. Leon, L. G. Franquelo, S. Vazquez, S. Kouro, and B. Wu. "Simple Modulator with Voltage Balancing Control for the Hybrid Five-Level Flying-Capacitor Based ANPC Converter". 20th IEEE International Symposium on Industrial Electronics (ISIE 2011), Gdansk, Poland, 27-30 June, 2011.

[88] A. Yafaoui, B. Wu and S. Kouro. "Improved Active Frequency Drift Anti-islanding Method with Lower Total Harmonic Distortion". 36th Annual Conference of the IEEE Industrial Electronics Society (IECON 2010), pp. 3216–3221, Phoenix, AZ, USA, 7-10 November, 2010.

[89] A. Calle, S. Alepuz, J. Bordonau, S. Kouro, S. Busquets-Monge. "Convertidor trifásico de tres niveles NPC con eliminación selectiva de armónicos conectado a la red ante la presencia de huecos de tensión". Seminario Anual de Automática, Electrónica industrial e Instrumentación (SAAEI 2010), Bilbao, Spain, 7–9 July, 2010. (In Spanish)

[90] S. Alepuz, A. Calle, S. Busquets-Monge, J. Bordonau, S. Kouro, B. Wu. "Control Scheme for Low Voltage Ride-Through Compliance in Back-to-back NPC Converter Based Wind Power Systems". International Symposium on Industrial Electronics (IEEE-ISIE 2010), pp. 2357–2362, Bari, Italy, 4-7 July, 2010.

[91] S. Kouro, K. Asfaw, R. Goldman, R. Snow, B. Wu and J. Rodríguez. "NPC Multilevel Multistring Topology for Large Scale Grid Connected Photovoltaic Systems". 2nd IEEE International Symposium on Power Electronics for Distributed Generation Systems (PEDG 2010), pp. 400–405, Hefei, China, 16-17 June, 2010.

[92] S. Rivera, S. Kouro, P. Cortés, S. Alepuz, M. Malinowski, B. Wu, and J. Rodríguez. "Generalized Direct Power Control for Grid Connected Multilevel Converters". IEEE International Conference on Industrial Technology (IEEE-ICIT 2010), pp. 1331–1338, Viña del Mar, Chile, 14-17 March, 2010.

[93] A. Wilson, P. Cortes, S. Kouro, J. Rodriguez, H. Abu-Rub. "Model predictive control for Cascaded H-bridge multilevel inverters with even power distribution". IEEE International Conference on Industrial Technology (IEEE-ICIT 2010), pp. 1271–1276, Viña del Mar, Chile, 14-17 March, 2010.

[94] S. Kouro, A. Moya, E. Villanueva, P. Correa, B. Wu and J. Rodríguez. "Control of a cascaded H-bridge multilevel converter for grid connection of photovoltaic systems". 35th Annual Conference of the IEEE Industrial Electronics Society (IECON09), Porto, Portugal, pp. 3976–3982, November 3-5, 2009.

[95] D. Andler, S. Kouro, M. Perez, J. Rodriquez and B. Wu. "Switching Loss Analysis of Modulation Methods Used in Neutral Point Clamped Converters". 1st IEEE Energy Conversion Congress and Exposition (ECCE09), San Jose, California, USA, pp. 2565–2571, September 20–24, 2009.

[96] S. Kouro, B. La Rocca, P. Cortés, S. Alepuz, B. Wu and J. Rodríguez. "Predictive Control Based Selective Harmonic Elimination With Low Switching Frequency for Multilevel Converters". 1st IEEE Energy Conversion Congress and Exposition (ECCE09), San Jose, California, USA, pp. 3130–3136, September 20–24, 2009.

[97] S. Alepuz, S. Busquets-Monge, J. Bordonau, P. Cortés and S. Kouro. "Control Methods for Low Voltage Ride-Through Compliance in Grid-Connected NPC Converter Based Wind Power Systems Using Predictive Control". 1st IEEE Energy Conversion Congress and Exposition (ECCE09), San Jose, California, USA, pp. 363–369, September 20–24, 2009.

[98] P. Cortés, A. Wilson, S. Kouro, J. Rodríguez and H. Abu-Rub. "Model Predictive Control of Cascaded H-Bridge multilevel inverters". 13th European Conference on Power Electronics and Applications (EPE09), Barcelona, Spain, pp. 1–9, 8–10 September, 2009.

[99] P. Cortes, S. Kouro, B. La Rocca, R. Vargas, J. Rodriguez, J. I. Leon, S. Vazquez, L. G. Franquelo. "Guidelines for Weighting Factors Design in Model Predictive Control of Power Converters and Drives".IEEE International Conference on Industrial Technology, IEEE-ICIT09, Gippsland, Australia, 10–13 February 2009.

[100] S. Vazquez, J. I. Leon, L. G. Franquelo, J. Rodriguez, P. Cortes, S. Kouro, J. M. Carrasco, O. Martinez. "Model Predictive Control with Constant Switching Frequency Using a Discrete Space Vector Modulation with Virtual State Vectors".IEEE International Conference on Industrial Technology, IEEE-ICIT09, Gippsland, Australia, 10–13 February 2009.

[101] J. I. Leon, S. Kouro, S. Vazquez, L. G. Franquelo, J. M. Carrasco, J. Rodriguez, R. Portillo. "Two-dimensional Modulation Technique for Multilevel Cascaded H-bridge Converters".IEEE International Conference on Industrial Technology, IEEE-ICIT09, Gippsland, Australia, 10–13 February 2009.

[102] S. Kouro, M. Pérez, H. Robles and J. Rodríguez. "Switching Loss Analysis of Modulation Methods Used in Cascade H Bridge Multilevel Converters". 39th IEEE Power Electronics Specialists Conference (PESC08), Rhodes, Greece, pp. 4662–4668, 15–19 June, 2007.

[103] M. Pérez, S. Kouro, J. Rodríguez and B. Wu. "Modified Staircase Modulation with Low Input Current Distortion for Multicell Converters". 39th IEEE Power Electronics Specialists Conference (PESC08), Rhodes, Greece, pp. 1989–1994, 15-19 June, 2008.

[104] C. Silva, S. Kouro, P. Lezana and J. Soto. "Control of an Hybrid Multilevel Inverter for Current Waveform Improvement". 2008 IEEE International Symposium on Industrial Electronics (ISIE 08), Cambridge, UK, pp. 2329–2335, June 30-July 2, 2008.

[105] M. Angulo, P. Lezana, S. Kouro, J. Rodríguez and B. Wu. "Level-shifted PWM for Cascaded Multilevel Inverters with Even Power Distribution". IEEE 38th Annual Power Electronics Specialists Conference (PESC'07), Orlando, Florida, USA, pp. 2373–2378, 17–21 June, 2007.

[106] M. Perez, J. Rodriguez, J. Pontt and S. Kouro. "Power Distribution in Hybrid Multi-cell Converter with Nearest Level Modulation". IEEE International Symposium on Industrial Electronics (ISIE 2007), Vigo, Spain, pp. 736–741, 4–7 June, 2007.

[107] S. Kouro, R. Bernal, C. Silva, J. Rodríguez and J. Pontt. "High performance torque and Flux control for multilevel inverter fed induction motors". The 32nd Annual Conference of the IEEE Industrial Electronics Society (IECON 2006), pp. 805–810, Paris, France, 7–10 November, 2006.

[108] S. Kouro, R. Bernal, H. Miranda, J. Rodríguez and J. Pontt. "Direct Torque Control With Reduced Switching Losses for Asymmetric Multilevel Inverter Fed Induction Motor Drives". IEEE 41st Industry Applications Society Annual Meeting (IAS 2006), vol. 5, pp. 2441–2446, Tampa, Florida, USA, 8–12 October, 2006.

[109] S. Kouro, M. Angulo, J. Rodríguez and J. Pontt. "Multicarrier PWM With DC-Link Ripple Feedforward for Multilevel Inverters". 12th International Power Electronics and Motion Control Conference, (EPE-PEMC06), pp. 234–239, Portoroz, Slovenia, August 30–September 1, 2006.

[110] S. Kouro, J. Rodríguez, J. Pontt and M. Angulo. "Multilevel Inverter Modulation Method With DC-Link Disturbance Compensation". The 31st Annual Conference of IEEE Industrial Electronics Society (IECON 2005), pp. 709–714, Raleigh, North Carolina, USA, 6–10 November, 2005.

[111] J.Pontt, J.Rodriguez, S. Kouro, C. Silva, H. Farías and M. Rotella. "Output Sinus Filter for Medium Voltage Drive with Direct Torque Control". IEEE 40th Industry Applications Society Annual Meeting (IAS 2005), vol. 1, pp. 204–209, Hong Kong, China, 2–6 October, 2005.

[112] J. Rodríguez, S. Kouro, J. Rebolledo and J. Pontt. "A reduced switching frequency modulation algorithm for high power multilevel inverters". IEEE 36th Annual Power Electronics Specialists Conference (PESC'05), pp. 867–872, Recife, Brazil, 12–16 June, 2005.

[113] J. Rodríguez, J. Pontt, C. Silva, S. Kouro and H. Miranda. "A Novel Direct Torque Control Scheme for Induction Machines With Space Vector Modulation". IEEE 35th Annual Power Electronics Specialists Conference (PESC'04), pp. 1392–1397, Aachen, Germany, 20–25 June, 2004.

[114] J. Rodríguez, J. S. Lai, F. Z. Peng and S. Kouro. "Multilevel Inverters: A Survey of Topologies, Controls and applications". *Invited paper*, The 7th Brazilian Power Electronics Conference (COBEP'2003), pp. 33–48, Fortaleza, Brazil, 21–24 September, 2003.

[115] J. Rodríguez, J. Pontt, S. Kouro and P. Correa. "Direct Torque Control with Imposed Switching Frequency and Torque Ripple Minimization in an 11-Level Cascaded Inverter". IEEE 34th Annual Power Electronics Specialists Conference (PESC'03), vol. 2, pp. 501–506, Acapulco, Mexico, 15–19 June, 2003.

Postdoc, PhD, MSc and Undergraduate Supervision

Postdoc

[1] Postdoctoral fellow supervisor of Dr. Mokhtar Aly 2019 – to date.

[2] Postdoctoral fellow supervisor of Dr. Freddy Flores, 2018 – to date.

[3] Postdoctoral fellow supervisor of Dr. Andrii Chub, 2018 – to date.

[4] Postdoctoral fellow supervisor of Dr. Sebastian Rivera, 2017 – 2018.

[5] Postdoctoral fellow supervisor of Dr. Hugues Renaudineau, 2015 – 2017.

[6] Postdoctoral fellow co-supervisor of Dr. Freddy Flores. Since June 2015 – 2017.

[7] Postdoctoral fellow supervisor of Dr. Christian Rojas, 2013 – 2016.

PhD

[8] Matías Aguirre, "Finite Control Set Model Predictive Control for Renewable Energy Conversion Systems", August 2018.

[9] Jaime Zapata, "Partial power dc-dc converters for two stage photovoltaic energy conversion systems", March 2018.

[10] Margarita Norambuena, "Design, Control and Analysis of a Novel Multilevel Converter with Reduced Switch Count", October 2017.

[11] Diana Lopez, "High Voltage Ratio Step-up Converters for Photovoltaic Microinverters", examen de calificación de tema de tesis aprobado en Diciembre 2016.

[12] Nicolás Müller, "Energy-Storage for Complementary Services in Grid-Tied PV Systems", programa de doble titulación Co-guía Pat Wheeler, The Univ. of Nottingham, examen de calificación en Noviembre 2016

[13] Carlos Fuentes, "SiC based converter topologies for renewable energy conversion systems", en desarrollo, exámen de calificación en Agosto 2016, programa de doble titulación Co-guía con Steffen Bernet, T.U. Dresden.

[14] Carlos Reusser, "Converter topologies for multiphase WECS applications", examen de calificación en Diciembre 2015.

MSc

[15] MSc Thesis supervisor. Ricardo Hernández,"Microinversores Fotovoltaicos Submodulares con Convertidores DC-DC en Cascada y Enlace Senoidal Rectificado para Conexión a Red", Nov. 2018.

[16] MSc Thesis supervisor. Daniel Pesántez,"Convertidores de potencia parcial sin transformador para estaciones de carga rápida de vehículos eléctricos", finaliza 2018.

[17] MSc Thesis supervisor. Julian Rojas, "Partial power converters for electric vehicle fast-charging stations", en progreso, finaliza 2018.

[18] MSc Thesis supervisor. Williams Flores, "Micro-inversor fotovoltaico submodular con conexión en cascada a red", April 2018.

[19] MSc Thesis supervisor (co-guided with Béatrice Cabon). Quentin Surirey, "Comparison of DC-DC converters for photovoltaic submodule microinverter", Ecole nationale supérieure de physique, électronique, matériaux, Grenoble INP-Minatec, Grenoble, France, September 2017.

[20] MSc Thesis supervisor. Alexander Morrison, "Convertidor DC-DC de potencia parcial para sistemas fotovoltaicos en configuración string", July 2017.

[21] MSc Thesis supervisor. Guillermo Gimpel, "Evaluation of dc-dc converter stages used in multistring photovoltaic systems", Jan. 2016.

[22] MSc Thesis supervisor. Paz Castillo, "Convertidor fotovoltaico DC-DC para la interfaz directa de energía con el proceso de electrorefinación de cobre", Dec. 2015.

[23] MSc Thesis supervisor. Eduardo Gutiérrez, "Control Predictivo de Convertidor Puente H-NPC para sistemas fotovoltaicos monofasicos conectados a red", Nov. 2015.

[24] MSc Thesis supervisor. Nicolás Müller, "Configuración multinivel de media tensión para sistemas de conversión de energía marina", April 2015.

[25] MSc Thesis supervisor. Carlos Fuentes, "Convertidor puente H en cascada para sistemas fotovoltaicos multistring con conexión directa a red de medida tensión y barra colectora DC única", Nov. 2014.

[26] MSc Thesis supervisor. Cristian Verdugo, "Convertidores multinivel tipo T para sistemas de conversión de energía para sistemas de conversión de energía fotovoltaica monofásica multi-sting de baja potencia", Oct. 2014.

[27] MSc Thesis supervisor. Javier Echeverría, "Convertidor multi-modular dc-dc en cascada para sistemas de conversión de energía fotovoltaica de gran escala con conexión a una red de alta tensión en corriente continua", Sept. 2014.

[28] MSc Thesis supervisor. Gabriel Estay, thesis title: "Convertidor Híbrido Multinivel para Sistema de Conversión de Energía Eólica con un Generador de Imanes Permanentes Dual Trifásico". Jan. 2014.

[29] MSc Thesis co-supervisor. Sebastian Rivera, thesis title: "Control Directo de Potencia para Conexión a Red de Convertidores Multinivel", 2011.

[30] MSc Thesis co-supervisor. Alvaro Moya, thesis title: "Conexión a Red de Sistemas Fotovoltaicos mediante Convertidores Multinivel", 2010.

[31] MSc Thesis co-supervisor. Bruno La Rocca, thesis title: "Control predictivo de voltaje con eliminación selectiva de armónicas y baja frecuencia de conmutación", 2009.

[32] MSc Thesis co-supervisor. Daniel Andler, thesis title: "Análisis de Eficiencia de los principales Métodos de Modulación aplicados al Convertidor NPC", 2009.

[33] MSc Thesis co-supervisor. Hernán Robles, thesis title: "Evaluación de eficiencia de métodos de modulación en inversores multinivel puente H en cascada", 2009.

[34] MSc Thesis co-supervisor. Rafael Bernal, thesis title: "Adaptación de Control Directo de Torque para Aplicaciones en Accionamientos con Inversores Multinivel", 2006.

[35] MSc Thesis co-supervisor. Jaime Rebolledo, thesis title: "Modulaciones para Inversores Multinivel Asimétricos", 2006.

Undergraduate

[36] Undergraduate final project supervisor. Nicolás Gonzalez, "Simulación de sistema de tracción para transporte Hyperloop", en desarrollo, 2018.

[37] Undergraduate final project supervisor. Javier Escobar, "Convertidor dc-dc para sistema híbrido de batería ion-litio y supercapacitores para aplicación de electro movilidad", en desarrollo, 2018.

[38] Undergraduate final project supervisor. Julian Rojas, "Partial power converters for electric vehicle fast-charging stations", en desarrollo, Tesis aprobada Enero 2018.

[39] Undergraduate final project supervisor. Felipe Vargas, “Convertidor dc-dc de potencia parcial para LED ”, en desarrollo, 2017.

[40] Undergraduate final project supervisor. Felipe Gil, “Convertidor dc-dc de potencia parcial para poducción de hidrógeno a partir de energía fotovoltaica”, en desarrollo, 2017.

[41] Undergraduate final project supervisor. Ricardo Hernández,“Microinversor flyback en cascada submodular con inversor puente H Unfolder para conexión a red”, en desarrollo, Tesis aprobada enero 2017.

[42] Undergraduate final project supervisor. Williams Flores, “Micro-inversor fotovoltaico submodular con conexión en cascada a red”, April. 2018.

[43] Undergraduate final project supervisor. Freddy Toledo, “Control predictivo de un quasi-z-source inverter para sistemas fotovoltaicos”, Nov. 2017.

[44] Undergraduate final project supervisor. Javier Urrutia, “Generación de potencia controlada orientada a servicios auxiliares en convertidores fotovoltaicos conectados a la red”, October 2017.

[45] Undergraduate final project supervisor. Alexander Morrison, “Convertidor de potencia parcial para inversores fotovoltaicos de dos etapas en configuración string”, July 2017.

[46] Undergraduate final project co-supervisor. Fernando Ruiz, “Modelado de un Sistema de Almacenamiento basado en un banco de SuperCondensadores”, January 2017.

[47] Undergraduate final project supervisor. Andrés Dávila, “Microinversor Fotovoltaico con Dos Etapas Elevadoras”, Nov. 2016.

[48] Undergraduate final project supervisor. Álvaro Collao, “Análisis y evaluación de métodos utilizados para la detección de isla en sistemas de generación fotovoltáica”, April 2016.

[49] Undergraduate final project supervisor. Adrián Vásquez, “Diseño de un puntero laser con celda fotovoltaico y almacenamiento en supercapacitores”, Nov. 2016.

[50] Undergraduate final project supervisor. Guillermo Gimpel, “Evaluation of dc-dc converter stages used in multistring photovoltaic systems”, Jan. 2016.

[51] Undergraduate final project supervisor. Paz Castillo, “Convertidor fotovoltaico DC-DC para la interfaz directa de energía con el proceso de electrorefinación de cobre”, Dec. 2015.

[52] Undergraduate final project supervisor. Bernardo Farías, “Convertidor dc-dc submodular para microinversores fotovoltaicos”, December 2015.

[53] Undergraduate final project supervisor. Eduardo Gutiérrez, “Control Predictivo de Convertidor Puente H-NPC para sistemas fotovoltaicos monofasicos conectados a red”, Nov. 2015.

[54] Undergraduate final project supervisor. Nicolás Müller, “Configuración multinivel de media tensión para sistemas de conversión de energía marina”, April 2015.

[55] Undergraduate final project supervisor. Israel Estay, “Análisis de corrientes de fuga en sistemas fotovoltaicos monofásicos”, March 2015.

[56] Undergraduate final project supervisor. Darwin Cardemil, “Modelado de celdas y módulos fotovoltaicos monofaciales y bifaciales”, July 2015.

[57] Undergraduate final project supervisor. Claudio Sotomayor, “Comparación de sistema solar térmico con solar fotovoltaico para regular temperatura de electrolito en sistema de electrorrefinación de metales”, October 2015.

[58] Undergraduate final project supervisor. Magdalena Iturriaga, “Monitoreo de condiciones y técnicas de análisis predictivo de variadores de frecuencia”, Co-guía César Silva, Nov. 2014.

[59] Undergraduate final project supervisor. Carlos Fuentes, “Convertidor puente h en cascada para sistemas fotovoltaicos multistring con conexión directa a red de medida tensión y barra colectora dc de única”, Nov. 2014.

[60] Undergraduate final project supervisor. Daniel Edwards, “Convertidos puente H-NPC trifásico con devanados abiertos como inversor central en sistemas fotovoltaicos”, Nov. 2014.

[61] Undergraduate final project supervisor. Cristian Verdugo, “Convertidores multinivel tipo T para sistemas de conversión de energía para sistemas de conversión de energía fotovoltaica monofásica multi-sting de baja potencia”, Sept. 2014.

[62] Undergraduate final project supervisor. Alex Medina, “Comparación de métodos de control de búsqueda del punto de máxima potencia en sistemas fotovoltaicos”, Sept. 2014.

[63] Undergraduate final project supervisor. Javier Echeverría, “Convertidor multi-modular dc-dc en cascada para sistemas de conversión de energía fotovoltaica de gran escala con conexión a una red de alta tensión en corriente continua”, Aug. 2014.

[64] Undergraduate final project co-supervisor. Francisco Guentelican, “Análisis de sensibilidad económica para generadores fotovoltaicos particulares”, March 2015.

[65] Undergraduate final project co-supervisor. Gabriel Estay, “Convertidor Híbrido Multinivel para Sistema de Conversión de Energía Eólica con un Generador de Imanes Permanentes Dual Trifásico”. Jan. 2014.

[66] Undergraduate final project supervisor. Roberto Ruiz, project title: Control predictivo de sistemas de conversión de energía fotovoltaica con puente H en cascada trifásico. May 2014.

[67] Undergraduate final project supervisor. Nelson Elorza, project title: "Estudio De Factibilidad Técnica Y Económica De Un Sistema Fotovoltaico Para Generación Particular Conectado A Red". May 2013.

[68] Undergraduate final project supervisor. Raul Novoa, project title: "Diseño y control de un convertidor Dc/Dc con aislación de alta frecuencia para sistemas fotovoltaicos". Oct. 2013.

[69] Undergraduate final project supervisor. Sebastian Rivera, thesis title: “Control Directo de Potencia para Conexión a Red de Convertidores Multinivel”, 2011.

[70] Undergraduate final project co-supervisor. Francisco Barrios, project title: “Control Predictivo de un convertidor puente H en cascada para aplicaciones fotovoltaicas”. Finished 2011.

[71] Undergraduate final project co-supervisor. Raul Vargas, project title: “Diseño de un emulador de panel fotovoltaico utilizando una topología puente-H”. 2010.

[72] Undergraduate final project supervisor. Alvaro Moya, thesis title: “Conexión a Red de Sistemas Fotovoltaicos mediante Convertidores Multinivel”, 2010.

[73] Undergraduate final project supervisor. Ronald Becker, project title: “Simulación de un convertidor multicelda en cascada regenerativo asimétrico”, 2009.

[74] Undergraduate final project supervisor. Bruno La Rocca, thesis title: “Control predictivo de voltaje con eliminación selectiva de armónicas y baja frecuencia de conmutación”, 2009.

[75] Undergraduate final project supervisor. Daniel Andler, thesis title: “Análisis de Eficiencia de los principales Métodos de Modulación aplicados al Convertidor NPC”, 2009.

[76] Undergraduate final project supervisor. Hernán Robles, thesis title: “Evaluación de eficiencia de métodos de modulación en inversores multinivel puente H en cascada”, 2009.

[77] Undergraduate final project supervisor. Rafael Bernal, thesis title: “Adaptación de Control Directo de Torque para Aplicaciones en Accionamientos con Inversores Multinivel”, 2006.

[78] Undergraduate final project supervisor. Jaime Rebolledo, thesis title: “Modulaciones para Inversores Multinivel Asimétricos”, 2006.

Keynotes, Tutorials, Workshops, Seminars and Courses

Keynote & Plenary

[1] S. Kouro, plenary presentation, “Trends, challenges and opportunities in photovoltaic energy conversion systems” 1st Seminar series on Next generation power electronics for PV energy systems, Viña del Mar, Chile, 12-13 Dec. 2018.

[2] S. Kouro, plenary presentation, “Transición energética: Desafíos y oportunidades para Chile”, III USM TECH INNOVATION SUMMIT, Santiago, Chile, 20 Nov. 2018.

[3] S. Kouro, plenary presentation, “6 Seminario Ayllu - Energía solar, desafíos y oportunidades para Chile”, Arica, Chile, 10 August, 2018.

[4] S. Kouro, plenary presentation, “Energías renovables y electro-movilidad desafíos y oportunidades para Chile”, Seminario Mercado Energético: Su impacto en el sector empresarial, organizado por Asociación de Empresas de la V Región (ASIVA), Viña del Mar, 21 de Junio, 2018.

[5] S. Kouro, plenary presentation, “Renewable energy in Chile: the potential, reality check and the opportunity”, Seminario Chile-China: Energías Alternativas y Sociedad – Proyecciones al Futuro, Sede Sofofa, Santiago, Chile, May 4, 2018.

[6] S. Kouro, plenary presentation, “The Role of Academia to Foster Electromobility in the Country - Initiatives and Experiences”, International Seminar on Technology Prospecting in Electromobility, Ministry of Energy, Santiago, Chile, Jan. 9, 2018.

[7] S. Kouro, Plenary Presentation, “Opportunities challenges and trends in photovoltaic energy conversion systems”, 13th International Conference on Power Electronics (CIEP 2016), Guanajuato, Mexico, June 20, 2016.

[8] Keynote speaker, “Solar industry technology – Made in Chile”, kick-off seminar of the Solar Strategic Program by CORFO, Santiago, Chile, 29 January, 2016.

[9] Keynote speaker, “Research on Photovoltaic Energy Conversion Systems at UTFSM ”, IEEE Toronto Section, Seminar on Advanced Technologies in Power System and Power Electronics, September 19, 2015, Toronto, Canada.

[10] Keynote speaker, “Energía solar en plantas mineras: Integración con el proceso y análisis de las pérdidas producidas por la contaminación”, Exponor 2015, Antofagasta, Chile, 15 de Mayo de 2015.

[11] J. Rodriguez, F. Blaabjerg, S. Kouro, “Invited plenary: Hints for successful research publication – An Industrial Electronics Perspective”, 38th Annual Conference of the IEEE Industrial Electronics Society (IECON 2012), Montreal, Canada, 27 October 2012.

[12] Keynote speaker, “Multilevel Converters: Topologies, Controls and applications”. IEEE National Students Conference (Ingelectra 2007), Temuco, Chile, 24 August, 2007.

Tutorials

[13] L. Franquelo, J. Leon, S. Kouro, M. Perez, “Tutorial on Multilevel Converters: Present and Future”, 38th Annual Conference of the IEEE Industrial Electronics Society (IECON 2012), Montreal, Canada, 26 October 2012.

[14] B. Wu and S. Kouro, “Tutorial: Wind Energy Conversion Systems: fundamentals, topologies and control”, 21st IEEE International Symposium on Industrial Electronics (ISIE 2012), Hangzhou, China, 28 May, 2012.

[15] S. Kouro, “Tutorial on Configurations and Control of Wind Energy Conversion Systems”, 37th Annual Conference of the IEEE Industrial Electronics Society (IECON 2011), Melbourne, Australia, 7 November, 2011.

[16] S. Kouro, “Tutorial on Configurations and Control of Wind Energy Conversion Systems”, 14th European Conference on Power Electronics and Applications (EPE 2011), Birmingham, UK, August 29, 2011.

[17] L. Franquelo, J. I. León, S. Kouro. “Tutorial on Multilevel Converters: Current Developments and Future Trends”. IEEE International Conference on Industrial Technology (IEEE-ICIT 2010), Viña del Mar, Chile, 14 March 2010.

[18] L. Franquelo, J. Rodríguez, J. I. León, S. Kouro , M. Pérez and P. Lezana. “Tutorial on Multilevel Converters: Current Developments and Future Trends”. IEEE International Conference on Industrial Technology, IEEE-ICIT09, Gippsland, Australia, 12 February 2009.

[19] L. Franquelo, J. Rodríguez, J. I. León, S. Kouro and P. Lezana."Tutorial on Recent Advances on Multilevel Converters". 33rd Annual Conference of the IEEE Industrial Electronics Society (IECON 2007), Taipei, Taiwan, 5–8 November, 2007.

[20] J. Rodríguez, J. I. León, S. Kouro and P. Lezana. "Tutorial on Multilevel Converters". IEEE International Symposium on Industrial Electronics (ISIE 2007), Vigo, Spain, 6 June, 2007.

[21] L. G. Franquelo, J. I. León, J. Rodríguez, S. Kouro and P. Lezana. "Tutorial on Multilevel Converters". 12th International Power Electronics and Motion Control Conference (EPE-PEMC 2006), Portoroz, Slovenia, 29 August, 2006.

[22] J. Rodríguez, S. Kouro and P. Lezana. "Tutorial on Multilevel Converters". International Conference on Power Electronics and Intelligent Control for Energy Conservation (PELINCEC 2005), Warsaw, Poland, 16 October, 2005.

Workshops & Seminars

[23] Invited speaker, "Integración de energía renovable al sistema eléctrico: nuevas tecnologías fotovoltaicas", Universidad San Francisco de Quito, Quito, Ecuador, June 1, 2019.

[24] Invited speaker, "Investigación asociativa de excelencia en Chile: La experiencia del Centro Avanzado en Ingeniería Eléctrica y Electrónica (AC3E)",Universidad Técnica del Norte, Ibarra, Ecuador, May 30, 2019.

[25] Invited speaker, "Tendencias, desafíos y oportunidades en sistemas de conversión de energía fotovoltaica", Universidad Técnica del Norte, Ibarra, Ecuador, May 30, 2019.

[26] Invited speaker, "Cambio climático, energía y desarrollo humano", Taller +3.0 grados Celcius 2070, Departamento de Arquitectura, UTFSM, Valparaiso, Chile, March 26, 2019.

[27] Invited speaker, "DC-DC Partial power converters and their potential applications", University of Toronto, Canada, Feb. 5, 2019.

[28] Invited speaker, "Trends, challenges and opportunities in photovoltaic energy conversion systems", University of Toronto, Canada, Feb. 1, 2019.

[29] Invited speaker, "Fomentando la Innovación basada en ciencia: experiencia en la USM", Workshop Materiales, nanotecnología e industria: nuevas rutas para la innovación en Chile, Valparaiso, Chile, Jan 9, 2019.

[30] Invited speaker, "Technology for Photovoltaic Energy Systems: Latest Drivers", International Seminar on Key Technologies for Future Energy Systems, Universidad de Santiago de Chile, Santiago, 1 December, 2017.

[31] Invited speaker, "Renewable Energy and Electromobility: a Technology Opportunity for Chile and the Region", The Future of Energy in the Valparaiso Region, Seremi de Energía, UTFSM, Valparaiso, Chile, 23 Nov. 2017.

[32] Invited speaker, "Solar Energy: challenges and opportunities for Chile", Monthly meeting of the Energy Commission of the Colegio de Ingenieros de Chile, Santiago, 16 Nov. 2017.

[33] Invited speaker, "Opportunities, challenges and trends in photovoltaic energy conversion systems", visiting researcher seminar, Institute of Control and Industrial Electronics, Warsaw University of Technology, Warsaw, Poland, 19 September, 2017.

[34] Invited speaker, "Opportunities, challenges and trends in photovoltaic energy conversion systems", visiting researcher seminar, LAPLACE, INP Toulouse, Toulouse, France, January 27, 2017.

[35] Public Policy Workshop: "Guidelines for a national policy for research centers", organized by National Council for Innovation and Development (CNID), Santiago, 14 October 2015 and 28 April 2016.

[36] Invited speaker, "Photovoltaic Energy, a technological opportunity in Chile – A power electronics example", Chile - Europuean Union Solar Energy Workshop, Seville, Spain, November 11, 2014.

[37] Invited speaker, “Energía fotovoltaica, su presente y futuro”, Seminario: La ciencia aplicada a la energía y el agua, Copiapo, Chile, 20 August, 2014.

[38] Invited speaker, “Conversión y Control de Sistemas Fotovoltaicos Conectados a la Red”, Curso Unidades de Generación y Almacenamiento de Energía para Micro-redes y Tracción Eléctrica, Universidad de Chile, Santiago, Chile, 4-6 August, 2014.

[39] Invited speaker, “Conversion and control of grid-connected photovoltaic systems”, Graduate student seminar, Ryerson University, Toronto, Canada, July 30, 2014.

[40] Invited speaker, “Energía solar fotovoltaica ¿Cómo se llega del sol a la red?”, Ciclo de Charlas departamento de Electrónica, UTFSM, Valparaiso, Chile, September 2013.

[41] S. Kouro, "Línea 1 SERC Chile: Energía solar en la industria/minería", workshop Propuestas para la Elaboración de la Estrategia Nacional de Energía Solar, Santiago, Chile, 28 November, 2013.

[42] Invited speaker, “Medium voltage converters for renewable energy conversion systems”, workshop for IDT, Santiago, Chile, 3 May, 2013.

[43] Invited speaker, “Multilevel Power Converters–An Introduction”, Seminar on Energy Conversion Systems, Universidad de Chile, Santiago, April 11, 2013.

[44] Invited speaker, “Sistemas de conversión de energía fotovoltaica”, 1er Encuentro Nacional de Energías Renovables No Convencionales (ERNC): Presente y Futuro, Viña del Mar, Chile, September 3, 2012.

[45] Invited speaker, “Power Electronics and Its Applications in Renewable Energy Conversion Systems”, Department of Electrical and Computer Engineering Fall 2010 Research Seminar Series, Ryerson University, Toronto, Canada, October 7, 2010.

[46] Invited speaker, “Recent Advances in High Power Converters and their application to renewable energy conversion systems”, invited speaker, University of Seville, Seville, Spain, 14 de Julio, 2010.

[47] Invited speaker, “Workshop on Predictive Control: Predictive Control of Grid Connected High Power Converters”. IEEE International Conference on Industrial Technology (IEEE-ICIT 2010), Viña del Mar, Chile, 14 March, 2010.

[48] Invited speaker, “Multilevel Converters Technology Overview: Topologies, Modulations and Applications”, Internal workshop on multilevel converters, Rockwell Automation, Cambridge, ON, Canada, January 5, 2010.

[49] Invited speaker, “Use of Matlab for Electronics Engineering”, *National Matlab Day*, UTFSM, 15 April 2004.

Courses

[50] S. Kouro, Course on Physics for Architects, “Energía solar - desde el sol a la red eléctrica”, Valparaiso, 29 Nov. 2018.

[51] S. Kouro, “Short Course on Inverters in photovoltaic systems”, Chilean Ministry of Energy, Santiago, Chile, 26 August, 2016.

[52] Intensive executive program “Singularity University Chile Summit”, Santiago Chile, 26 and 27 April, 2016.

[53] S. Kouro, “Photovoltaic Energy Conversion Systems – Fundamentals, Topologies, and Control”, Cursos de Apoyo a la Formación Doctoral en los Programas de Doctorado Universidad de Sevilla, Seville, Spain, 14 November 2014.

[54] S. Kouro, “Sistemas de conversión de energía eólica – configuraciones y control”, Cursos de Apoyo a la Formación Doctoral en los Programas de Doctorado Universidad de Sevilla, Seville, Spain, 10 November, 2014.

[55] S. Kouro, “Matlab Course” for academics of the Department of Chemical Processes, UTFSM, 13-14 January, 2004.

Editorial and Chair activities / Scientific Committees / PhD Examination Committees

Editor

[1] Guest Editor, "Special Issue on Emerging Converter Topologies and Control for Grid Connected Photovoltaic Systems", Energies, Nov. 2018 - to date.

[2] Guest Editor, "Special Section on Photovoltaic Module and Sub-Module Level Power Electronics and Control". IEEE Transactions on Industrial Electronics, June 2017–May 2019.

[3] Associate Editor of the International Journal of Electrical Power and Energy Systems (JEPE), by Elsevier, 2016–2017.

[4] Guest Editor, "Special Section on Energy Conversion in Next-generation Electric Ships", IEEE Transactions on Energy Conversion, since March 2016 to March 2017.

[5] Guest Editor, Special Issue: "Advances in Multi-MW Wind Energy Conversion Systems", IET Electric Power Applications, since January 2016 to March 2017.

[6] Guest Editor, "Special Issue on Modular Multilevel Converters", IEEE Transactions on Power Electronics, March 2013 to January 2015.

[7] Guest Editor, "Special Section on Modulation Techniques for DC to AC Power Converters". IEEE Transactions on Industrial Electronics, from February 2011 to May 2013.

Chair

[8] Special Session Chair, "Emerging Converter Topologies and Control for High-Performance PV Systems", 45th Annual Conference of the IEEE Industrial Electronics Society (IECON 2019), Lisbon, Portugal, Oct. 14-17, 2019.

[9] Special Session Chair, "Medium-Voltage High Power Converters", 45th Annual Conference of the IEEE Industrial Electronics Society (IECON 2019), Lisbon, Portugal, Oct. 14-17, 2019.

[10] Special Session Chair, "Battery and Super-capacitor Energy Storage Systems for Renewable Energy Applications", 28th International Symposium on Industrial Electronics (ISIE 2019), Vancouver, BC, Canada, June 12–14 , 2019.

[11] Special Session Chair, "Emerging Converter Topologies and Control Methods for High-Performance small-scale PV Systems", 44th Annual Conference of the IEEE Industrial Electronics Society (IECON 2018), Washington, D.C., USA, October 21 – 23, 2018.

[12] Co-organizer, III USM TECH INNOVATION SUMMIT, in Charge of Energy Transition Program, Santiago, Chile, 20 Nov. 2018.

[13] Co-organizer, "Seminar on Next Generation power electronics for PV energy systems", Viña del Mar, Chile, 12-13 Dec. 2018.

[14] Special Session Chair, "Stability in Power Converters 2", Tenth Annual IEEE Energy Conversion Congress and Exposition (ECCE 2018), Portland, Oregon, USA, Sept. 23–27, 2018.

[15] Chair of the IEEE Power Electronics Society Chile Section Chapter (PEL35), since 2017 to date.

[16] Member of the Program Committee, 4th Symposium on Predictive Control of Electrical Drives and Power Electronics (PRECEDE 2017), Pilsen, Czech Republic, 4-6 September, 2017.

[17] Technical Program Chair, 3rd IEEE Annual Southern Power Electronics Conference, IEEE SPEC 2017, Pto. Varas, Chile, 4-7 December, 2017.

[18] Technical Track Chair, "Power Electronics for Energy Storage Systems", 8th International Symposium on Power Electronics for Distributed Generation Systems (PEDG 2017), Florianópolis, Brazil, 17-20 April, 2017.

[19] Technical Track Chair, "Renewable energy sources and technology", IEEE 11th International Conference on Compatibility, Power Electronics and Power Engineering (IEEE CPE-POWERENG 2017), Cadiz, Spain, April 4–6, 2017.

[20] Technical Track Chair, "DC-AC Converters", 2nd IEEE Annual Southern Power Electronics Conference, IEEE SPEC 2016, Auckland, New Zealand, 5-8 December, 2016.

[21] Special Session Chair, "Recent Development on Photovoltaic Energy Systems",IEEE International Symposium on Industrial Electronics (ISIE 2016), Santa Clara, CA, USA, 8-10 June, 2016.

[22] Special Session Chair, "Recent Advances on Photovoltaic Energy Conversion Systems", 42nd Annual Conference of the IEEE Industrial Electronics Society (IECON 2016), Florence, Italy, October 23-27, 2016.

[23] Technical Track Chair, "Power converter topologies and control", 42nd Annual Conference of the IEEE Industrial Electronics Society (IECON 2016), Florence, Italy, October 23-27, 2016.

[24] Special Session Chair on "Energy Storage Systems in Renewable Energy applications" for the IEEE International Conference on Industrial Technology (ICIT 2016), Taipei, Taiwan, 14-17 March, 2016.

[25] Special Session Chair."Conversion and Control of Photovoltaic Energy Systems", 41st Annual Conference of the IEEE Industrial Electronics Society (IECON 2015), Yokohama, Japan, November 9–12, 2015.

[26] Special Session Chair. "Multilevel Converters". IEEE International Symposium on Industrial Electronics (ISIE 2015), Buzios - Rio de Janeiro, Brazil, 3-5 June, 2015.

[27] Special Session Chair. "Grid-Connected Photovoltaic Energy Conversion Systems". IEEE International Symposium on Industrial Electronics (ISIE 2015), Buzios - Rio de Janeiro, Brazil, 3-5 June, 2015.

[28] Track Chair on "Power Electronics and Renewable Energy Conversion" for the IEEE International Conference on Industrial Technology (ICIT 2015), Seville, Spain, 17-19 March, 2015.

[29] Special Session Chair. "Grid-connected Photovoltaic Systems". IEEE International Conference on Industrial Technology (ICIT 2015), Seville, Spain, 17-19 March, 2015.

[30] Special Session Chair. "Photovoltaic Converter Topologies and Control". IEEE International Symposium on Industrial Electronics (ISIE 2014), Istanbul, Turkey, 1-4 June, 2014.

[31] Special Session Chair. "Photovoltaic Converter Topologies and Control'. IEEE International Conference on Industrial Technology (ICIT 2014), Busan, Korea, Feb 26 - March 1, 2014.

[32] International Steering Committee member, 2nd Symposium on Predictive Control of Electrical Drives and Power Electronics (PRECEDE 2013), Munich, Germany, 17-19 October 2013.

[33] Special Session Chair, "Special Session on Modular Multilevel Converters and other Multilevel Converter Topologies and Applications", 39th Annual Conference of the IEEE Industrial Electronics Society (IECON 2013), Vienna, Austria, Nov. 10-13, 2013.

[34] Special Session Chair, "Special Session on Photovoltaic Energy Conversion Systems", 39th Annual Conference of the IEEE Industrial Electronics Society (IECON 2013), Vienna, Austria, Nov. 10-13, 2013.

[35] Special Session Chair. "Multilevel Converters I", IEEE Energy Conversion Congress and Exposition Asia Down Under (ECCE Asia 2013), Melbourne, Australia, 4 June, 2013.

[36] Special Session Chair."Multilevel Converters Applications, Topologies, Control and Modulation Techniques". 38th Annual Conference of the IEEE Industrial Electronics Society (IECON 2012), Montreal, Canada, 25-28 October, 2012.

[37] Special Session Chair. "Advanced Topologies and Control for Wind Energy Conversion Systems'." 37th Annual Conference of the IEEE Industrial Electronics Society (IECON 2012), Montréal, Canada, 25-28 October, 2012.

[38] Special Session Chair. "Wind Energy Conversion Systems: Advances in Configurations and Control". 21th IEEE International Symposium on Industrial Electronics (ISIE 2012), Hangzhou, China, 28-31 May, 2012.

[39] Special Session Chair. "Special Session on Multilevel Converters". 37th Annual Conference of the IEEE Industrial Electronics Society (IECON 2011), Melbourne, Australia, 7–10 November, 2011.

[40] Track Chair for International Electric Machines and Drives Conference (IEEE-IEMDC 2011), Niagara Falls, ON, Canada, 15-18 May, 2011.

[41] Special Session Chair. "Special Session on Multilevel Converters". 20th IEEE International Symposium on Industrial Electronics (ISIE 2011), Gdansk, Poland, 27–30 June, 2011.

[42] Special Session Chair. "Advances in topologies, control and application of grid-connected converters for wind and photovoltaic energy conversion systems". The 36th Annual Conference of the IEEE Industrial Electronics Society (IECON 2010), Glendale, Arizona, USA, 7-10 November, 2010.

[43] Special Session Co-Chair. "Multilevel Converters". 21th IEEE International Symposium on Industrial Electronics (ISIE 2012), Hangzhou, China, 28-31 May, 2012.

[44] Special Session Chair. "Advanced Topologies, Modulation, Synchronization, And Control Techniques For Grid-Connected Power Converters". The IEEE 2010 International Symposium on Industrial Electronics (ISIE 2010), Bari, Italy, 4–7 July, 2010.

[45] Special Session Co-Chair. "Grid connected renewable energy power conversion systems". The 2010 IEEE International Conference on Industrial Technology (ICIT 2010), Viña del Mar, Chile, 14–17 March, 2010.

[46] Special Session Co-Chair. "Special Session on Multilevel Converters for High Power Applications". 34th Annual Conference of the IEEE Industrial Electronics Society, IECON08, Orlando, Florida, USA, 10–13 November, 2008.

[47] General Chair, 3rd Conference of Young Researchers of the Millennium Science Initiative (ICM, Mideplan, Chilean Government), Punta de Tralca, 27–29 September 2006.

Scientific and Expert Committees

[48] International Steering Committee member,5th Southern Power Electronics Conference (COBEP/SPEC 2019), Santos - Sao Paulo, Brazil, December 1-4, 2019.

[49] International Steering Committee member,5th Symposium on Predictive Control of Electrical Drives and Power Electronics (PRECEDE 2019), Quanzhou, China, May 31 - June 2, 2019.

[50] Member of the International Scientific Committee, ELECTRIMACS 2019 Salerno, Italy, 21st-23rd May 2019.

[51] Member of work group, "International Energy Agency IEA – Photovoltaic Power Systems Programme (PVPS)", since 2017 to present.

[52] Invited expert, "Taller de Actualización de la hoja de ruta del Programa de Energía Solar", by CORFO, Santiago, 16 and 31 August, 2017.

[53] Member of the Experts Committee for the definition of the "Long Term Energy Scenarios 2050", Chilean Ministry of Energy, March-April, 2017

[54] Member of the International Advisory Board of the "12th IEEE International Conference on Compatibility, Power Electronics, and Power Engineering (IEEE CPE-Powereng 2018)", Doha, Qatar, 10–12 April, 2018.

[55] Member of the Board of Directors of the "Smart Industry Strategic Program" of CORFO, since January 2016 to date.

[56] Member of the IEEE Industrial Electronics Society Technical Committee on Power Electronics, since October 2014 to date.

[57] Member of the IEEE Industrial Electronics Society Technical Committee on Renewable Energy Systems, since October 2013 to date.

[58] Member of the IEEE Industrial Electronics Society "Student and Young Professionals Activity Committee", served as Student Forum General Chairman, since November 2013 to November 2017.

[59] Organizing Committee member, II Foro Solar2016 (EnerSol 2016), Antofagasta, Chile, 5 October, 2016.

[60] Technical Committee member of 3rd International Seminar on Energy Management in Mining, ENERMIN 2016, Santiago, Chile, 24–26 de Agosto, 2016.

[61] Scientific Committee member of the 12th triennial Electrimacs Conference (Electrimacs 2017), Toulouse, France, 4-6 July, 2017.

[62] Evaluation committee member of the program "Innova Chile" from Corfo, 2016.

[63] Evaluation committee member of the program "Energías – Concurso de Pasantías en el Extranjero para Investigadores Y Profesionales del Sector Público Y Privado, Convocatoria 2016", organized by the Ministry of Energy and Conicyt, for the 2016 call.

[64] Member of the "Cultural and Professional Merits Committee" to assess the Physics Department of UTFSM in the hiring of an Academic for the Area of High Energy Physics, June 2015.

[65] Member of the Conicyt-Fondecyt project evaluation board for Engineering Group 2, from March 2012 to March 2015 (Postdoc, Initiation to research and Regular projects grants).

[66] Member of the Conicyt-Fondequip project evaluation committee for Engineering, 2012.

[67] Organizing committee member. The 2010 IEEE International Conference on Industrial Technology (ICIT 2010), Viña del Mar, Chile, 14–17 March, 2010.

PhD Examination Committees

[68] International PhD Thesis Examination Committee member. Thesis by Jackson Lago, Uiversidade Federal de Santa Catarina, Brasil, June 2015.

[69] International PhD Thesis Examination Committee member. Thesis by Carlos Teixeira, RMIT University, Melbourne, Australia. December 2013.

[70] External PhD Thesis Examination Committee member. Thesis by Claudio Burgos, Universidad de Chile, Santago, Chile. September 2013.

Outreach and Support to Public Policy

Outreach

[1] Invited speaker, Conicyt-Explora seminar series: 1000 Scientists 1000 Classrooms, "Energías renovables y electro-movilidad desafíos y oportunidades para Chile", Escuela Ilusion, Viña del Mar, 4 de Octubre, 2018.

[2] Educational video, Experimenta - Ciencia de Niños, episodio: "Energía solar, cuidando el planeta" CNTV Infantil, 25 Jul., 2018.

[3] Educational video, Exploradores: del átomo al cosmos, episodio "Energías renovables, factor clave para el desarrollo", 4 August, 2017.

[4] Invited speaker, Campamento STEM USM 2017: Taller Robótica y energías renovables, "Energía solar y su impacto en Chile", Universidad Técnica Federico Santa María, Valparaíso, 17 de Enero, 2017.

[5] Invited speaker, Conicyt-Explora seminar series: 1000 Scientists 1000 Classrooms, "Solar Energy - From the sun to the electric grid", Colegio Guardiamarina Riquelme, Valparaíso, 13 Octubre, 2016.

[6] S. Kouro, TEDx talk on "¿Nuclear Energy from Chile for the World?", TEDx UTFSM, Valparaiso, Chile, 12 August, 2016.

[7] Invited speaker, Conicyt-Explora seminar series: Fridays of culture + Science, "Solar Energy - Opportunities for Chile", Museo Fonck, Viña del Mar, 18 March, 2016.

Public Policy

[8] Member of the "Consejo Directivo del Comité Solar e Innovación Energética" of the Ministry of Energy and CORFO, since December 2018 to date.

[9] S. Kouro, "Energía fotovoltaica y Actividades de investigación en la UTFSM", Serie de Cursos para el Fortalecimiento de capacidades institucionales en formulación y evaluación de proyectos ERNC, Subsecretaría del Ministerio de Energía y CER de CORFO, Valparaíso, Chile, 10 de Octubre de 2014.

Memberships

- IEEE Senior Member, The Institute of Electrical and Electronics Engineers (IEEE), Senior Member since 2017, Member (2008-2016) and Student Member (2004-2008).
- Member of the IEEE Industry Applications Society, from 2006 to date.
- Member of the IEEE Power Electronics Society, from 2006 to date.
- Member of the IEEE Industrial Electronics Society, from 2005 to date.
- Member of the IEEE Power & Energy Society, from 2011 to date.

Awards and Honors

Career Awards

- 2018 IEEE-AIE Outstanding Engineer Award (IEEE-AIE Ingeniero Sobresaliente 2018), awarded by the Institute of Electrical and Electronics Engineers Region 9 and the Electrical and Electronics Industry Association of Chile (AIE), Santiago, Chile, December 5, 2018.
- Highly Cited Researchers 2018, Clarivate Analytics, this list recognizes world-class researchers selected for their exceptional research performance, demonstrated by production of multiple highly cited papers that rank in the top 1% by citations for field and year in Web of Science. November 27, 2018.
- 2016 IEEE Industrial Electronics Society Bimal K. Bose Award for Industrial Electronics Applications in Energy Systems, award for "Contributions to power conversion and control of photovoltaic and wind energy systems", received in Florence, Italy, 26 October 2016.
- 2015 IEEE Industrial Electronics Society J. David Irwin Early Career Award, "For contributions to research and development of multilevel converter technology and their application to renewable energy conversion systems", received in Yokohama, Japan, 11 November 2015.
- "2012 IEEE Power Electronics Society Richard M. Bass Outstanding Young Power Electronics Engineer Award", received in Raleigh, NC, USA, September 20, 2012.

Paper Awards

- Best Paper Award, 2018 IEEE 59th International Scientific Conference on Power and Electrical Engineering (RTUCON 2018), received in Riga, Latvia, Nov. 13, 2018.
- Best Paper Award, IEEE 12th International Conference on Compatibility, Power Electronics, and Power Engineering (CPE-POWERENG 2018), received in Doha, Qatar, April 11, 2018.
- 2015 2nd place Prize Paper Award, IEEE Transactions on Power Electronics, received in Milwaukee, USA, September 21, 2016.
- 1st prize IEEE Industry Applications Magazine Best Paper Award 2012, received in Orlando, 2013.

- "2011 IEEE Transactions on Industrial Electronics Best Paper Award", received in Montreal, Canada, October 27, 2012.
- "2008 IEEE Industrial Electronics Magazine Be st Paper Award", received in Porto, Portugal, November 4, 2009.
- Premio Universidad de Sevilla a Trabajos de Investigación de Especial Relevancia. Sevilla 27 de Junio de 2013.

Student Theses Awards

- Julian Rojas, Tercera Versión del Concurso de Innovación en Eficiencia Energética de ABB en Chile (CiEE2018), Primer Lugar, 2018.
- Williams Flores, Segunda Versión del Concurso de Innovación en Eficiencia Energética de ABB en Chile (CiEE2016), Primer Lugar, 2016.
- Daniel Andler, Segundo Concurso de Tesis y Memorias de Pregrado y Posgrado en Eficiencia Energética 2008 Fundación Chilectra, 2009.
- Carlos Fuentes, Premio "Roberto Ovalle Aguirre – Año 2015", Instituto de Ingenieros, 2014.

Other Awards

- Elevated to IEEE Senior Member in 2017.
- 2016 Distinguished Lecturer UTFSM, in merit to the recognition given by the students to the teaching performance during 2015, Valparaiso, 23 August 2016.
- "Student Travel Grant", IEEE 38th Annual Power Electronics Specialists Conference (PESC'07), Orlando, Florida, USA, June, 2007.
- The "Ismael Valdés Valdés" award from the Chilean Institute of Engineers in recognition of skills for organizing and directing, moral conditions, and good technical preparation, Santiago, Chile, 11 November 2005.
- Distinguished as one of "The 100 leaders of the country" by El Mercurio, Santiago, Chile, 2 October 2004.
- Distinguished as "The youngest researcher granted a Fondecyt project", award received from The President of the Republic Ricardo Lagos, Santiago, Chile, 18 May 2004.
- Doctoral scholarship, Universidad Técnica Federico Santa María, 2004–2008.
- Master in Science scholarship, Universidad Técnica Federico Santa María, 2002–2003.
- Awarded with "The academic merit scholarship", Universidad Técnica Federico Santa María, 1997-2002 (throughout the complete engineering program.
- Member of "The List of Honor of Students of Universidad Técnica Federico Santa María", from its creation in 2000 until graduation in 2002.

Languages

Spanish	Native language.
English	Advanced oral and written (maximum level 3/3+ in TOEIC exam, score 915/990).
Dutch	Advanced oral and written.

Interests and Hobbies

I like traveling and exploring different cultures. Also cooking and photography are among my passions. I consider myself both an urban and outdoors person. I like to play basketball and tennis. I also enjoy snorkeling, diving and rafting, although I don't practice these activities often (unfortunately).