

Name                      **José Antenor Pomilio**

Professional Address:

University of Campinas - School of Electrical and Computer Engineering  
Av. Albert Einstein, 400 - 13083-852 - Campinas - SP  
phone: (+55.19)35213748  
e-mail: antenor@fee.unicamp.br  
<http://www.fee.unicamp.br/dse/antenor>

**Educational and Academic Informations**

Electrical Engineering  
University of Campinas  
Campinas - Brazil  
From March 1979 to December 1983

Master in Electrical Engineering  
University of Campinas  
Campinas - Brazil  
From March 1984 to December 1986.  
Regenerative breaking of DC machine driven by DC Chopper: maximization of the saved energy.

Doctor in Electrical Engineering  
University of Campinas and Brazilian Synchrotron Laboratory  
Campinas - Brazil  
From March 1987 to July 1991.  
Study, Design and Implementation of a Novel Topology to a High Stability Current Source for Magnets.

Post-doc  
University of Padova  
Padova - Italy  
From July 1993 to June 1994.  
Project: High power factor, soft-commutated high stability current sources.

Associated Professor in Power Electronics  
University of Campinas  
Campinas - Brazil  
1998 - 2003  
Thesis: Novel applications and characteristics of the Cuk cell.

Post-doc  
Third University of Rome  
Rome - Italy  
From January to June 2003.  
Project: Coordinate control of power sources.

Full Professor  
University of Campinas  
Since 2003

Post-doc  
University of Padova  
Padova - Italy  
From May to November 2015.  
Project: Experimental Platform for Smart-Grids Studies: Sources, Converters and Control

## Professional Experience

1. Professor: School of Electrical and Computer Engineering, University of Campinas. Educational activities in graduate and undergraduate courses, researches in power electronics. Since November 2003.
2. Associated Professor: School of Electrical and Computer Engineering, University of Campinas. Educational activities in graduate and undergraduate courses, researches in power electronics. From December 1998 to November 2003.
3. Assistant Professor. School of Electrical and Computer Engineering, University of Campinas. Educational activities in graduate and undergraduate courses, researches in power electronics From April 1987 to November 1998.
4. Researcher at the Brazilian Synchrotron Laboratory. Head of the Power Electronics Group. From 1988 to 1991.
5. Instructor. School of Electrical and Computer Engineering, University of Campinas, From November 1984 to March 1987.
6. Electrical Engineer. Electrical Drives Laboratory. School of Electrical and Computer Engineering, University of Campinas. From January 1984 to November 1984

## Recent projects

### 1. Power Electronics applied to the electric power conditioning

Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq

From March 1996 to February 2016

### 2. Modernization of the DSCE network

Fundação de Amparo à Pesquisa do Estado de São Paulo- FAPESP

From November 1998 to February 2000

### 3. High quality rectifiers using low frequency commutation

Fundação de Amparo à Pesquisa do Estado de São Paulo- FAPESP

From March 2000 to May 2002

### 4. Electronic interfaces for low-power renewable energy sources

Fundação de Amparo à Pesquisa do Estado de São Paulo- FAPESP

From May 2001 to December 2002

### 5. Digital Platform for Power Converters control

Semikron do Brasil Ltda

From March 2003 to March 2004.

### 6. Losses reduction on secondary network using passive filters

Elektro – Eletricidade e Serviços S.A.

From November 2003 to March 2005.

### 7. Optimal location of capacitors in distribution grid

Elektro – Eletricidade e Serviços S.A.

From March 2008 to May 2010

### 8. High-voltage High-frequency resonant power supplies

Panozon Industrial, Sayyou Ltda.

Since 2007

### 9. Power Electronics in Smart-Grids

Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq

From March 2016 to February 2021

### 10. Aircraft Electrical Grids: Power Quality Conformity and Power Electronics Solutions

Fundação de Amparo à Pesquisa do Estado de São Paulo - FAPESP

From July 2017 to June 2019

## Advised Graduated Students: Ph.D.

1. Enes Gonçalves Marra: "Induction generator associated with PWM inverter as high quality power source". August 1999.
2. Edson Adriano Vendrusculo: "Study and implementation of a strategy for minimizing overvoltage in PWM fed electric motors through long cables" June 2001.
3. Teresa Esther Nuñez Zuñiga: "Synthesis and applications of negative inductances". December 2002.
4. Valmir Machado Pereira: "Study and dynamic modeling of induction generator driven by an internal combustion engine, controlling voltage and frequency by PWM inverter". February 2003. Co-adviser – Prof. Paulo A. Valente Ferreira.
5. Lourenço Matias: "Long distance induction motor drives: modeling and modulation techniques". February 2004.
6. Ricardo Quadros Machado: "Power Converter for connecting three-phase induction generator to a single-phase grid". February 2005.
7. Geomar Machado Martins: "Low-frequency commutation inverter for distributed generation systems based on fuel cells", July 2006.
8. André A. Ferreira: "Supervisory system for multiple power sources management in electrical vehicles", February 2007.
9. Leonardo de Araújo Silva: "Negative Inductance synthesis for electrical network compensation", March 2007.
10. Rodolfo Manuel Moreno Martinez: "Contributions to Power Flow control and islanding management in power distributed generation using power electronics converters", February 2010.
11. Sérgio Pires Pimentel, "Multilevel Single-phase inverter for distributed generation system", July 2011
12. Newton da Silva, "Contributions to the study, Design and Application of Hybrid Active Power Filters", February 2012.

13. Juliana Lopes, "Methodologies Sizing and Management of Energy Sources for Electric Vehicles", October 2012.
14. Marcos Balduino de Alvarenga, "PWM Modulation strategy Applied to Symmetrical Multilevel Cascade Converters for DC Bus voltage balancing and Minimization Switching", July 2013.
15. Jakson Paulo Bonaldo, "Multifunctionality of electronic power converters used in smart microgrids", May 2015.
16. Filipe de Nassau e Braga, "Electronic interface for power flow and power quality Control in distributed generation systems Connected Directly to the mains", September 2015.
17. Danilo Iglesias Brandão, "*Coordinated power-based-control and utility interface converter in low voltage microgrids*" September 2015.
18. Tiago Davi Curi Busarello "Study And Development Of Multilevel Inverters For Applications In Intelligent Distribution Systems", October 2015.
19. Antonio Carlos da Costa Telles, "Contribution to modeling and realization of Ultra-low Voltage oscillators with application in Energy harvesting", November 2016.
20. Eduardo Verri Liberado, "Design and control of a power quality interface and its cooperation with distributed switching power interfaces", February 2017.

#### **Publications: Recent International Journals (last 10 years)**

1. G. M. Martins, J. A. Pomilio, S. Buso and G. Spiazzi: "Three-Phase Low-Frequency Commutation Inverter for Renewables". IEEE Trans. on Industrial Electronics, vol. 53, no. 5, Oct. 2006, Page(s): 1522-1528.
2. R. Q. Machado, S. Buso, J. A. Pomilio: "A Line-Interactive Single-Phase to Three-Phase Converter System". IEEE Transactions on Power Electronics, vol. 21, no. 6, November 2006, pp. 1628-1636
3. J. A. Pomilio e S. M. Deckmann: "Characterization and Compensation of Harmonics and Reactive Power of Residential and Commercial Loads". IEEE Trans. on Power Delivery, vol. 22, no. 2, Abril 2007, pp. 1049-1055.
4. S. Finco, W. Melo, J. A. Pomilio, B. Borges, P. Santos, F. Castaldo: "A Smart Power Integrated Circuit Educational Tool", IEEE Transactions on Power Electronics, Volume 22, no. 4, Julho 2007, pp. 1290 - 1302
5. A. A. Ferreira, J. A. Pomilio, G. Spiazzi e L. de Araujo Silva,: "Energy Management Fuzzy Logic Supervisory for Electric Vehicle Power Supplies System", IEEE Transactions on Power Electronics, Volume 23, Issue 1, Jan. 2008 pp. 107 – 115
6. E. A. Vendrusculo, G. de C. Queiroz, G. De Martino Jannuzzi, H. X. da Silva Jr. and J. A. Pomilio; "Life cycle cost analysis of energy efficiency design options for refrigerators in Brazil", Journal Energy Efficiency, Springer Netherlands, ISSN 1570-646X (Print) 1570-6478 (Online), Vol. 2, No. 3, August, 2009, DOI 10.1007/s12053-008-9034-6, Pages 271-286.
7. Deaecto, G.S. Geromel, J.C. Garcia, F.S. Pomilio, J.A. "Switched affine systems control design with application to DC-DC converters", IET Control Theory & Applications, July 2010, Vol.: 4, No.: 7, pp. 1201 – 1210, ISSN: 1751-8644, DOI: 10.1049/iet-cta.2009.0246
8. J. P. Bonaldo, J. A. Pomilio, "Spectral Analysis of Square-wave Pulse Density Modulation: an Analytical Approach", Int. Journal of Engineering Research and Applications, Vol. 3, Issue 2, March-April 2013, pp. 385-391, ISSN : 2248-9622
9. F. S. Garcia, J. A. Pomilio, G. Spiazzi, "Modeling and Control Design of the Interleaved Double Dual Boost Converter", IEEE Transactions on Industrial Electronics, Vol. 60, Issue: 8 pp. 3283 – 3290, DOI: 10.1109/TIE.2012.2203770, 2013.
10. E. V. Liberado, W. Souza, J. A. Pomilio, H. Paredes, F. P. Marafão: "Design of Static var Compensators using a General Reactive Energy Definition", Przegląd Elektrotechniczny, vol. 2013, Issue 11/2013, pp. 233-238, ISSN 0033-2097.
11. A. C. C. Telles; S. Finco; J. A. Pomilio: "Modeling of a MOS Ultralow Voltage Astable Multivibrator for Energy Harvesting", IEEE Transactions on Circuits and Systems II: Express Briefs, vol. 61, no. 3, march 2014, pp. 168-172, DOI: [10.1109/TCSII.2013.2296123](https://doi.org/10.1109/TCSII.2013.2296123)
12. M. B. Alvarenga, J. A. Pomilio, "Voltage Balancing and Commutation Suppression in Symmetrical Cascade Multilevel Converters for Power Quality Applications", IEEE Transactions on Industrial Electronics, Volume 61: pp. 5996-6003, Issue: 11, 2014 DOI: [10.1109/TIE.2014.2308157](https://doi.org/10.1109/TIE.2014.2308157)
13. J. A. Pomilio, L. de Araújo Silva, A. A. Ferreira, "Series Compensation with Negative Inductance: Stability Analysis and Applications", Journal of Electrical and Control Engineering, Vol. 4, Issue 2, April 2014, Pages 22-29, ISSN: 2226-2881 (Print), ISSN: 2226-289X (Online), <http://www.joece.org/paperInfo.aspx?ID=5791>
14. T. D. C. Busarello, N. da Silva, E. A. Vendrusculo, J. A. Pomilio, "Contributions to the Design of Derivative Hybrid Filters: Modeling and Analysis in Distorted Voltage Grids", Journal of Control, Automation and Electrical Systems, Vol. 25, issue 4, pp. 448-460, 2014. <http://link.springer.com/article/10.1007%2Fs40313-014-0127-5>
15. J. P. Bonaldo, J. A. Pomilio, E. A. Vendrusculo, "Power Equalization Techniques for Three-Phase VSI-driven Single-Phase Ozone Generators", Ozone: Science & Engineering: The Journal of the International Ozone Association, Published online: 28 Apr 2014, DOI: 10.1080/01919512.2014.904734, ISSN 1547-6545 (online), ISSN 0191-9512 (print), Vol. 37, no. 1, Jan. 2015, pp. 9-21,
16. E. V. Liberado, F. P. Marafão, M. G. Simões, W. A. de Souza, J. A. Pomilio, "Novel expert system for defining power quality compensators", [Expert Systems with Applications, Volume 42, Issue 7](#), 1 May 2015, Pages 3562–3570
17. J. P. Bonaldo, H. K. M. Paredes, J. A. Pomilio, "Multifunctional Current Reference Generation Strategy for Grid-tied Power Electronic Converter", PRZEGLAD ELEKTROTECHNICZNY, Vol 2015, No 3, pp.142-148, March 2015, ISSN 0033-2097
18. T. D. C. Busarello; J. A. Pomilio, "[Bidirectional multilevel shunt compensator with simultaneous functionalities based on the conservative power theory for battery-based storages](#)", IET Generation, Transmission & Distribution, Volume: 9, Issue: 12, Pages: 1361 - 1368, Year: 2015, DOI: [10.1049/iet-gtd.2014.0900](https://doi.org/10.1049/iet-gtd.2014.0900)

19. M. Godoy Simões, T. D. C. Busarello, A. S. Bubshait, F. Harichi, J. A. Pomilio, F. Blaabjerg, "[Interactive Smart Battery Storage for a PV and Wind Hybrid Energy Management Control Based on Conservative Power Theory](#)", International Journal of Control, 2015, ISSN 0020-7179 (Print), 1366-5820 (Online) **DOI:** 10.1080/00207179.2015.1102971
20. J. P. Bonaldo, H. K. Morales-Paredes, J. A. Pomilio, Control of Single-Phase Power Converters Connected to Low-Voltage Distorted Power Systems With Variable Compensation Objectives, IEEE Trans. on Power Electronics, Vol. 31, No. 3, March 2016, pp. 2039-2052, DOI 10.1109/TPEL.2015.2440211
21. T.D.C. Busarello, J.A. Pomilio, M.G. Simoes, "[Passive Filter Aided by Shunt Compensators based on the Conservative Power Theory](#)", IEEE Transactions on Industry Applications, vol. 52 (4), 3340 – 3347, July/August 2016.
22. Brandao, Danilo; Guillard, Hildo; Paredes, Helmo; Marafao, Fernando; Pomilio, Jose, Optimized Compensation of Unwanted Current Terms by AC Power Converters under Generic Voltage Conditions. IEEE Transactions on Industrial Electronics, vol. 63, nº 12, pp. 7743 – 7753, Dezembro de 2016.
23. Brandao, Danilo I.; Caldognetto, Tommaso; Marafao, Fernando P.; Simoes, Marcelo G.; Pomilio, Jose A.; Tenti, Paolo. Centralized Control of Distributed Single-Phase Inverters Arbitrarily Connected to Three-Phase Four-Wire Microgrids. IEEE Transactions on Smart Grid, vol. 8, No. 1, PP. 437-446, Janeiro de 2017.

#### **Reviewer activities: International Journals**

1. IEEE Trans. on Power Electronics
2. IEEE Trans. on Industrial Electronics
3. IEEE Trans. on Industry Applications
4. IEEE Trans. on Circuits and Systems, Part I
5. IEEE Trans. on Energy Conversion
6. IEEE Trans. on Power Delivery
7. IEEE Trans. on Aerospace and Electronics Systems
8. IEEE Trans. on Control Systems Technology
9. IEEE Trans. on Sustainable Energy
10. Journal of Emerging and Selected Topics in Power Electronics - IEEE
11. IET Proc. Electric Power Applications
12. IET Proc. Generation, Transmission & Distribution
13. IET Electronics Letters
14. European Transactions on Electrical Power
15. International Transactions on Electrical Energy Systems – Wiley, ISSN 2050-7038
16. Journal on Circuits, Systems and Computers
17. International Journal of Power and Energy Systems – IASTED
18. Journal of Ozone Science & Engineering
19. Journal of Zhejiang University (China)
20. Engineering Review, ISSN 1330-9587 (Print), ISSN 1849-0433 (Online)

#### **Comunitary activities**

1. Editor of the Newsletter of the Brazilian Power Electronics Society. From 12/91 to 06/93.
2. Liaison of the IEEE Power Electronics Society to Region 9 and member of the Administrative Committee. From 1998 to 1999.
3. Vice-president of the Brazilian Power Electronics Society. From Sept. 1999 to Oct. 2000.
4. Editor of "Eletrônica de Potência" journal, of the Brazilian Power Electronics Society. From 05/99 to 12/2000, and 2005.
5. Elect "At-large member" of the IEEE Power Electronics Society AdCom. From 2000 to 2002.
6. President of the Brazilian Power Electronics Society. From 11/2000.
7. Associated editor of the IEEE Transaction on Power Electronics, since January 2003.
8. Director of the School of Electrical and Computer Engineering, From April 2011 to April 2015.

#### **Technological production: Patent**

1. "Three-phase inverter with low-frequency commutation and low-current distortion for renewable power sources". Instituto Nacional de Propriedade Industrial - INPI, Patent PI 0201.377-0, 29/12/2015, Brazil.
2. "Control Methodology for hybrid storage energy systems", PI1000319-3 (pending) Authors: José Antenor Pomílio, Felipe Saldanha Garcia and André Augusto Ferreira, Brazil

Campinas, June 2017