

Prof Pericle Zanchetta

Publication impact: SCOPUS (18/01/2021)

Number of papers: 328

Journal papers 100

Conference papers: 224

Editorials: 4

Citations 6257

H-index 33

Elevated to IEEE Fellow class 2019

Scientific Paper Awards

Second prize IEEE-IAS Industrial Power Converters Committee Paper Award 2019

Third prize IEEE-IAS Industrial Power Converters Committee Paper Award 2017

Best IEEE Industrial Electronics Magazine paper award 2014

Second prize US Hybrid Transportation Paper Award 2013

Education:

- 5 years Laurea degree in Electronic Engineering, Technical University of Bari (Italy) February 1994
- Ph.D. in Electrical Engineering, Technical University of Bari (Italy) May 1998

Academic Career

Dept. of Electrical, Computer and Biomedical Engineering, University of Pavia, Italy

- November 2018 – present: Full Professor in Power Electronics

Dept. of Electrical and Electronic Engineering, University of Nottingham, UK

- August 2013 – present: Full Professor in Control and Power Electronics Systems
- August 2009 – July 2013: Associate professor in Control and Power Electronics Systems
- October 2001 – July 2009: Lecturer in Control and Power Electronics Systems

Electrical and Electronic Engineering Department, Technical University of Bari, Italy

- January 1999 – September 2007: Assistant Professor in Power Electronics
- November 1997 to December 1998: Research Associate
- November 1994 to October 1997: PhD student

Research Projects (total budget around 27Million Euro)**Principal Investigator (around 5Million Euro):**

- ENI Italia Spa, Power conversion system for redox vanadium battery interface in PV applications, (200k Euro) 2020-2022
- Phase Italia Spa “SiC Power converter for fast battery charger in automotive applications” (200k GPB) 2019-2021
- Best Motion Technology Co. Ltd China: “High performance PM servo drive control” (970k GPB) 2017-2020
- Phase Italia Spa “Design and development of a 500kW Matrix converter” (150k GPB) 2017-2020

- EPSRC GCRF “Smart Micro-grid Systems for Remote Islands in the South Pacific” (20k GBP) 2017-2018
- EPSRC Power electronics centre: “SiC open end winding PM machine drive for aircraft starter generator” (200k GBP)
- Nowforever Technology Co. Ltd China: “Advanced control of induction motor drives” (800k GBP) 2012-2017
- leMRC-Cummins generators “Fuel consumption Optimization of diesel generator power packs” (60k GBP) 2007 – 2010
- KTP Water Research Centre (WRc): Non-Intrusive load and efficiency monitoring for in service induction motors, (130k GBP) 2009 – 2011
- Water Research Centre (WRc): “Controlling energy costs using non-intrusive monitoring” (20k GBP) 2006 - 2008
- University of Nottingham “Biologically Inspired System Identification for Materials Characterization in the Aerospace Industry” (12k GBP) 2005 – 2006
- USA army: “GA optimisation of a 400kW induction motor drive using a SiC inverter” funded by US Army (50k USD) 2004 - 2006
- EU “Marie Curie Early Stage Training Area” Leading partner, (1600k Euro) 2004 - 2008
- “Short Term Mobility” grant for researchers from the Italian CNR - National Research Council (5k Euro)
- Ansaldo Trasporti Italy “Electromagnetic emissions produced by power converters in railway systems” (50K Euro). 1999 – 2000

Co-investigator (around 22Million Euro):

- EPSRC Power Electronics centre (10M GBP). 2014-2019
- EU JTI (CLEAN SKY) (5M Euro)– 2009 – 2016
- EU (MOET) – 2006 – 2009 (2M Euro)
- EU (UNIFLEX) – 2006 – 2009 (1.9M Euro)
- EPSRC: PEMC group Nottingham Platform grant (1M GBP)– 2006 – 2009
- US army “Project AMSRL-DS-E/R&D 9780-EE-01 (70-1s)” (400k USD) 2004-2006
- “90kVA Matrix Converter Ground Power Unit” funded by AXA POWER (50k Euro) 2004
- EU “Marie Curie Early Stage Training Area” (800k Euro) 2002 - 2004
- Italian Government “Low power electrical drives for home-applications” (50K Euro) 2001 - 2003
- Italian Government “LISAR: Development of Scientific Laboratory of Automation and Robotics” (300k Euro) 2001 -2003
- UK ministry of Defence “Development of a 40KVA matrix converter to provide aircraft ground power supply” (100K GBP) 2001 – 2003
- Italian Government “Cluster 13 – Electromagnetic Compatibility” (700K Euros).2000 – 2003

Research Interests

Power Electronics for Renewable energy systems, smart grids, and transportation, Electrical drives and Control.

In particular:

- Grid connected power converters
- Power converters for smart grids and renewable energy systems
- Power quality, active filtering and impedance estimation
- Stability and control of power electronics embedded networks, both in Energy and automotive/aerospace systems
- Reliability and diagnostic in power electronics and drives
- Advanced control of power converters and electrical drives - Model Predictive Control and Repetitive Control
- Power Electronics and drives for automotive and aerospace applications
- SiC converters design and implementation
- AC power supplies

- Matrix and Multilevel converters
- Control design, optimization and system identification using Heuristic Algorithms
- Modulation strategies for power electronics converters

Visiting professorships

- February 2020: University of Tampere Finland
- June 2019, May 2016, March 2016, July 2014: University of Talca, Chile
- February 2019: Harbin Institute of Technology, China
- May-June 2018, December 2016, Every January 2007-2010: University of Roma Tor Vergata, Rome Italy
- May-July 2017, July 2016, December 2015, July 2015, May-July 2013: University of Roma Tre, Rome Italy
- April 2017, April 2016, May 2014: University of Pavia, Italy
- September 2015: NTNU, Trondheim, Norway
- July 2014, May 2011, November - December 2010: Technical University Federico Santa Maria, Valparaiso, Chile
- July 2014: University of Chile, Santiago – Chile
- April 2014, April 2012: CPES, Virginia Tech, VA, USA
- March 2014: University of Nottingham – Ningbo Campus China
- June – October 2000, December 1999 – March 2000: University of Nottingham, UK
- July 1999: ANSALDO Trasporti Naples (Italy)

International Activities

- Editor in chief of the IEEE open journal of Industry applications from January 2020
- Member of the IEEE-IAS (Industry Applications Society) board of directors from January 2020
- IEEE IAS IPCSD (Industrial Power Conversion Systems Department) chair 2020-2021
- IEEE –IAS IPCC (Industrial Power Converter Committee) Transactions chair 2018-2022
- IEEE IAS IPCSD vice-chair 2018-2019
- Member of the Executive committee (Voting member) and of the International Scientific Committee of EPE (European Power Electronics) Association from 2016
- Technical Program Chair of the IEEE-ECCE 2018 conference, Portland USA
- 2016-2017 Chair of the IAS IPCC
- 2014-2015 Vice-Chair of the IAS IPCC
- 2012-2013 Secretary of the IAS IPCC
- 2010-2011 European Liaison of the IAS IPCC
- Vice Chair of IEEE ECCE Conferences from 2012 to 2017
- Associate Editor for IEEE transactions on Industry Applications from 2009, for IEEE transactions on Industrial Informatics 2011-2019
- Member of the Technical Program Committee and Track Chair for IEEE IECON 2016 and IEEE ISIE 2010
- British Council delegate to Texas A&M University, Doha Qatar, March 2015
- Member of the organizing and Technical Program Committees IEEE ISIE 2010
- Invited speaker predictive control workshop, IEEE ICIT conference, Vina del Mar, Chile (March 2010)
- Tutorial “Automated Intelligent Control design for Power Electronic Systems and Drives” IEEE IECON 2006, IEEE ISIE 2007
- Guest editor IEEE transactions on Industrial Electronics Special Section “Optimization in Power Electronics, Electrical Machines and Drives” (2010-2011).
- Guest editor IEEE transactions on Industrial Informatics/Industrial Electronics Special Section “Digital Control in Power Electronics and Drives” (2011-2013).
- Topic Chair at ECCE conferences and IAS annual meetings from 2006 to 2011

- Sessions chair at many international conferences
- Research collaboration (joint publications and/or research grants) with over 100 institutions and companies worldwide

Invited talks and keynotes

- Keynote speaker at the IASTED AsiaMIC 2013 Control of power converters, April 2013, Phuket, Thailand
- Converters co-ordinated control in power electronics embedded grids, University of Talca, Chile May 2019
- Power electronics energy and transportation, Harbin Institute of Technology (HIT) China February 2019.
- 12 hours course on Control of Power Electronics Systems, University of Pavia, Italy, April 2017
- Power Electronics for smart grids, University of Talca, Chile May 2016
- 12 hours course on Control of Power Electronics Systems, University of Pavia, Italy, April 2016
- 12 hours course on Control of Power Electronics Systems, University of Talca, Chile, March 2016
- The importance of Power Electronics for future smart grids”, NTNU Trondheim, September 2015
- Summer school of University of Roma Tre, Italy July 2016: 1) Power Electronics in Aerospace systems and 2) Control of Power Electronics Systems
- Power Electronics for smart grids, University of Trento, Italy, January 2015
- The importance of Power Electronics in future electrical networks, University of Pavia, Italy, May 2014
- Member of the Technical Program Committee of the Energycon 2012 conference, Florence, Italy, September 2012
- Repetitive control systems, University of Santiago, Chile, December 2010 and May 2011.

Teaching and Supervision

- More than 40 Ph.D students, more than 30 Visiting Scholars, Line manager of 15 Research fellows
- Thesis supervisor and personal tutor of several BEng, MEng and MSc students each year
- “Teaching Excellence Award 2015” from the Faculty of Engineering University of Nottingham
- Internal PhD examiner for more than 25 candidates at the University of Nottingham
- External PhD examiner for more than 20 candidates in UK, Italy and Norway

COURSES

- 20 credit year 4 “Advanced Control” University of Nottingham –UK
- 20 credit year 3 “Power Electronics and Control” University of Nottingham –UK
- 6 credit year 3 “Conversione statica dell’energia” University of Pavia, Italy
- 6 credit year 4 “Elettronica di Potenza” University of Pavia, Italy