

MASSIMO GUARNIERI

CURRICULUM VITAE

30/06/2025

Born 1955



Education

- July 1974 Diploma from classic high school scored 60/60
- 21.12.1979 Graduate degree in Electrical Engineering from University of Padua scored 110/110 cum laude.
- 28.04.1982 Master degree in Plasma Engineering and Controlled Thermonuclear Fusion from University of Padua scored 30/30 cum laude.
- 15.07.1985 Master degree in Business Administration from CUOA (University Consortium of Business Administration), Vicenza, Italy.
- 05.11.1987 PhD in Electrical Sciences in Rome (earned on titles).

Professional career

- 01.03.1980–28.02.1981 Scholarship holder at University of Padua (funded by University of Padua).
- 01.03.1981–28.02.1982 Scholarship holder at University of Padua (funded by Istituto Veneto di Scienze Lettere ed Arti).
- 01.07.1982–26.04.1983 Research assistant at CNR (Italian National Research Center) in Padua.
- 27.04.1983–30.10.1992 Research fellow of Electrical Engineering at University of Padua.
- 01.11.1992–30.09.2000 Associate Professor of Electrical Engineering at University of Padua.
- 01.10.2000–Present Full Professor of Electrical Engineering at University of Padua.
- 09.06.2022–Present Co-founder and CEO of the Padua University spin-off E-Storage srl, committed to industrial transfer of Energy Storage Technologies.

Teaching

- Oct 1990–Sept 2016 Electrical Engineering (Electric Circuits and Slow Electromagnetic Fields) in the degree program in Electronic Engineering at University of Padova.
- Oct 1989–Sept 1995 Electrical Engineering (Electric Circuits and Slow Electromagnetic Fields) in the degree program in Mechanical Engineering at University of Udine.
- Oct 2001–Sept 2003 Numerical Models for Electric Fields and Circuits in the master degree program in Electrical Engineering at University of Padova.
- Oct 2000–Sept 2003 Electric Engineering Laboratory in the Veneto Specialization Regional School for the training of secondary school teachers (SISS Veneto).
- Oct 2003–Sept 2008 Historical-Epistemological Foundations of Technological Development in the Veneto Regional Specialization School for secondary school teachers (SISS Veneto).
- Oct 2007–Sept 2024 History of Technology in the master degree program in Electrical Energy Engineering at University of Padova.
- October 2008 Appointed to deliver a course on multiphysics modeling of fuel cells at the Italian PhD National School in Electrical Engineering "F. Gasparini".
- Oct 2016–Present Electrical Engineering (Electric Circuits and Slow Electromagnetic Fields) in the degree program in Energy Engineering at University of Padova.
- Several lectures and seminars for master and PhD programs.

University and department appointments

- Oct 2009–Sept 2014 Chair of the Council of the Master Degree Program in Electrical Engineering.
- Oct 2009–Sept 2014 Chair of Department Teaching Commission coordinating 10 undergraduate and graduate programs.
- Oct 2013–Sept 2015 Member of the University Scientific Commission.
- Oct 2015–Sept 2019 Member of the Department Research Commission.
- Oct 2018–Sept 2022 Member of the Executive Board of the "Giorgio Levi Cases Energy Economics and Technical Studies Center" of the University of Padua, devoted to promote and support research on advanced energy.

17.09.2023–04.08.2023 Organizer and chair of the 2023 Summer School on Energy Storage, held in Padova in collaboration between University of Padua and University of Tennessee in Knoxville (US-TN).

Research positions and appointments

1986 Visiting scientist at the UKAEA laboratories in Culham (UK).
 1984 Visiting scientist at General Dynamics in San Diego (USA).
 2000 Founder and former leader of the Computational Electric Engineering Laboratory at the Department of Electrical Engineering (later merged into the Department of Industrial Engineering) of the University of Padua.
 2000 Chairman of the international workshop on the achievements of the PRIN1998 project lead by prof. Guglielmo Rubinacci and editor of the related scientific report.
 2004 Founder and leader the Hydrogen and Fuel Cell Laboratory at the Department of Industrial Engineering of the University of Padua.
 2009 Co-organizer and chairman of invited sessions in the International Coupled Problems 2009, 2011, 2013, 2015 and 2017 Congresses.
 2010 Founder and present leader the Electrochemical Energy Storage and Conversion Laboratory (EESCoLab) at the Department of Industrial Engineering of the University of Padua.
 2010 Co-chairman of ISPE12 - XII International Symposium on Polymer Electrolytes, Padua, 29 August to 3 September.
 2012 Track chairman of the 11th Biennial Conference on Engineering Systems Design and Analysis (ESDA2012), Nantes (France), July.
 2014 Co-chairman of the 7th German-Italian-Japanese Meeting of Electrochemists, Padua, June.
 2017 Session chairman at the 21st Solid State Ionics Conference, Padua, June.
 2023 Organizer and chairman of the Workshop on Long Duration Energy Storage, Padova, 28 July.
 2023 General co-chairman of the 8th IEEE conference HISTELCON, Florence, 7–9 September.
 2024 Session chairman at the 245 ECS Meeting, San Francisco, US-CA, May 26-30
 2024 Session chairman at the PRiME Pacific Rim Meeting, Honolulu, US-HI October 6-11.

Associative and institutional positions

2004–Present	Member of AEIT (Italian Association of Electrotechnical Electronics, Computer Automation and Telecommunications).
2006-2011	Chair of the Training and Profession Thematic Group of AEIT-ASTRI.
01.03.2012–Present	Member of IEEE (Institute of Electrical and Electronics Engineers)
2012-2020	Representative of the University of Padua in N.ERGHY, the association of the European universities and research institutes in the Fuel Cell and Hydrogen Joint Technology Initiative (FCH JTI) of the European Commission, which funded projects for 1.3 billion euros in the period 2014-2020.
13.03.2016–Present	Member of ECS (Electro-Chemical Society)
Sept 2017–Present	Coordinator of the UNIPD student association LEDS x Africa, which is committed to bringing electricity from renewable sources to remote areas of Africa, to combat energy poverty.
Feb 2017–Present	Member of the History Activity Committee of the of IEEE Italy Section.
2018-2022	Representative of the University of Padua in the Energy Storage joint program of EERA, the European Energy Research Association which contributes to define the funding programs of the European Commission in the energy field.
Sept 2018–Present	Expert for the Funding and Tender Opportunities of the European Commission for the evaluation of proposals presented at Horizon 2020, Horizon Europe, ERC, MSCA, ETN, ITN.
2019-Present	Member of the Batteries Europe Platform, in Working Group 6 Stationary Storage, which is supporting the European Commission in defining the roadmap and funding programs on batteries for the period 2020-2030.
Feb 2021-Feb 2023	Member of the IEEE European Public Policy Committee Working Group on Energy, which is responsible to the IEEE Board of Directors for the coordination of public policy activities relevant to the interests of IEEE members in European Union (EU) and European Free Trade Association (EFTA) countries.
May 2021–Dec 2023	Member of the Executive Board of Flow Batteries Europe (FBE) Association representing flow battery stakeholders with a united voice to shape a long-term strategy for the flow battery sector.
May 2021–Dec 2023	Chair of the Technological Committee of Flow Batteries Europe (FBE).

Apr 2021–Present Chair of the History Activity Committee of the of IEEE Italy Section.

International collaborations

He has promoted and is organizing collaborations with foreign universities that have resulted in exchanges (visiting scientist, visiting professor and visiting students funded by the University of Padua or by EC Erasmus programs), and in collaborative research, including:

- MoU (memorandum of understanding) with Tokyo University of Agriculture and Technology (J), 2015-2020.
- MoU (memorandum of understanding) with University of Tennessee in Knoxville (USA), 2020.
- Collaboration Agreement with Massachusetts Institute of Technology – MIT (Boston, USA)
- Other active collaborations: Vanderbilt University (Nashville, USA), Fraunhofer-Institut für Chemische Technologie (Pfinztal, Germania), Skoltech University (Moskow, Russia), Chalmers University of Technology (Gothenburg, Svezia), Universidad Carlos III (Madrid, Spain), Universitat Politècnica de Catalunya (Barcelona, Spain), Eindhoven University of Technology (The Netherlands).
- Starting collaborations: Christian-Albrechts-Universität (Kiel, Germania).
- Several seminars in foreign university and research centers (General Atomics, Culham Centre for Fusion Energy, Christian-Albrechts-Universität, Eindhoven University of Technology, MIT, ...)

Editorial duties

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| 2010–Present | Member of the editorial board, associate editor, and columnist of the IEEE Industrial Electronics Magazine. |
| 2020–Present | Associate editor of the Energies Journal. |
| 2020–2022 | Associate editor of the Electrochemical Storage Section of the Elsevier Encyclopedia of Energy Storage. |
| 2010–Present | Reviewer for high impact journals including Nature Energy, Advanced Materials, IEEE Industrial Electronics Magazine, Applied Energy, Journal of Power Sources, and Journal of Energy Storage. |

Public-funded projects

- From 1980 to 2000 he worked at Thermonuclear Fusion Research with Magnetic Confinement on two experiments. Experiment Eta Beta II (plasma current up to 200 kA) at University of Padua: he was engaged in design and construction of device upgrades and relevant experimental campaigns. Experiment RFX (plasma current up to 2000 kA) of the RFX Consortium (funded by CNR-ENEA-EURATOM): he was engaged in numerical investigations, preliminary and executive design, construction, and commissioning of the RFX Magnetic System, and eventual became the leader of the Magnetic System Group
- PRIN1998 of MURST (Italian Ministry of University and Scientific Research): he led a sub-project on RFP machines within the project led by prof. Guglielmo Rubinacci.
- PRIN2002 of MURST: he was the unit leader in the project led by prof. Giorgio Molinari (39,000 Euros).
- PRIN2004 of MURST: he was the unit leader in the project led by prof. Andrea Stella (49,000 Euros).
- PRIN2006 of MURST: he was the unit leader in the project led by prof. Andrea Stella (63,000 Euros).
- PRIN2008 of MURST: he was the deputy leader in the project led by prof. Andrea Stella (59,000 Euros).
- He led some research projects funded by the University of Padua.
- He led two projects for young graduate engineers funded by the Veneto Region with support from the European Social Fund (FES) in 2014-2015 (58,000 Euros).
- He was deputy leader in the 2011 Strategic Project of the University of Padua “From Materials for Membrane-Electrode Assemblies to Electric Energy Conversion and Storage Devices – MAESTRA” (810,000 Euros).
- He led the project “Next Generation VRFB Energy Storage Systems – NeGeVaESS” within the 2016 Program of the Giorgio Levi Cases Center for Energy Economics and Technology of the University of Padua (130,000 Euros).
- He led the project “Grid-optimized vanadium redox flow batteries: architecture, interconnection and economic factors – GoVBAIE” of the 2019 Program of the Giorgio Levi Cases Center for Economics and Energy Technology of the University of Padua (60,000 Euros).
- PRIN 2017 of MURST: he led sub-program of the project “Holistic approach to EnerGy-efficient smart nanOGRIDS – HEROGRIDS” led by prof. Paolo Mattavelli (593,000 Euros).
- PNRR NE2 Spoke 6 2022: he leads the research line on flow batteries (150,000 Euros).
- Program “Ricerca e sviluppo sull'idrogeno” (R&D on Hydrogen) of the M2C2PNRR-Next Generation EU: he presented the project “Sviluppo di stack di celle a combustibile di tipo PEM di nuova generazione ad alte prestazioni mediante soluzioni ingegneristiche innovative – SCOPERTE”, granted by Italian Ministero dell'Ambiente e della Sicurezza Energetica (MASE) (3,475,000 Euros).

- HORIZON-MSCA-2024-DN-01 – Proposal: 101226997 – Shaping Porous Electrode Architecture to Improve Current Density and Energy Efficiency in Redox Flow Batteries – SPACER, granted by the European Commission (4,462,932 Euros).

Private funded projects – Technological transfer

- He has promoted and led several projects for the transfer of electromagnetic, electrical, energy storage and renewable energy technologies funded by institutions and companies which, occasionally, have resulted in patent registrations. One of these projects, commissioned by the Venetian service company VERITAS in 2015, aimed at recover a compromised industrial area of Porto Marghera (Venice) and convert it into an industrial pilot plant provided with technologies related to renewable sources, funded with 1,200,000 Euros by the MATTM (the Italian Ministry for the Environment). The project has resulted in the construction of the Green Propulsion Laboratory, which included two prototypes of fully electrified technical boats powered by lithium-ion batteries and hydrogen and by fuel cells.
- He led the project ENI nr. 4310330019 (2019) “Miglioramento delle prestazioni della batteria a flusso”, aimed at optimizing the performance of a pilot microgrid with a flow battery (116,000 Euros).
- He led the FIAMM Energy Technology project (2021) “Studio e modellazione termica analitica e numerica di moduli di batterie al litio”, aimed at studying the thermal behavior and the thermal control of a Li-ion pack (154,000 Euros).
- He led the project ENI nr. 2500041939 (2023) “Disegno e costruzione di uno stack prototipale di potenza inferiore a 1kW per batteria a flusso con elettroliti organici”, aimed at supplying a stack for organic flow battery exhibiting superior operational performance and endurance (199,000 Euros).
- In July 2022 he co-founded with three young researchers the University of Padua spin-off E-Storage Engineering srl, and he now service as its CEO, whose mission is the transfer of technological and engineering know-how on energy storage.

Scientific production

He is the author of over 340 scientific publications and book chapters indexed in the Italian system IRIS, 188 of which are indexed in Scopus. They include 33 educational books (with subsequent editions) on electromagnetism, electrical circuits, electrical technologies and history of technology, written as a co-author or sole author, which are used in some Italian universities.

In the last five year he has received the following citations in Scopus: 353 (2020), 470 (2021), 563 (2022), 600 (2023), 532 (2024).

He has registered six patents.

He is listed in the World's Top 2% Scientists Ranking of the Stanford University (yearly and career 2021, 2022, 2023).

Prizes and acknowledges

22.02.1983 Recipient of a prize “reserved to young researchers for their scientific work on controlled thermonuclear fusion and connected technologies” funded by the Center G. Levi Cases of Energy Economics and Technology of the University of Padua and delivered by Istituto Veneto di Scienze Lettere ed Arti.

27.01.2024 IEEE Senior Member

21.03.2024 The Chair of the Council of Economic Advisers of the White House, Washington, acknowledged him that “your work has been cited in the 2024 Economic Report of the President”.

Scientific activity

In the first 22 years after graduation, the scientific activity regarded the Controlled Thermonuclear Fusion Research with Magnetic Confinement. He worked on the Eta Beta II project (0.2 MA plasma current), the second experiment in this line operating at the University of Padua, for which he managed the experimental sessions and developed the upgraded capacitor powering systems, which allowed to improve significantly the performance of the machine (“active crowbar systems” consisting of two capacitor banks: one for the poloidal system storing an energy of 580 kJ at 3.6 kV, and one for the toroidal system storing an energy of 20 kJ at 1 kV, with an investment of over 100 million lire in 1982, equivalent to 200,000 Euros of 2024). Additionally, he worked on RFX, the third experiment for nuclear fusion research in Padua and still the largest in the world in the RFP (Reversed Field Pinch) line and one of the largest for thermonuclear plasma experiments. Since graduation, he was developed the early studies of a magnetic system with an air core for the planned RFX machine. The work continued after graduation with a primary contribution to the conceptual design of the machine, which was instrumental in obtaining national and communitarian funding from

ENEA, CNR and EURATOM, totaling over 180 billion lire (200 million Euros of 2024). The machine was built within the RFX Consortium, a scientific organization that employs over 120 graduate researchers and collaborates with foreign centers (Culham Laboratory - UK, University of Cork - IE, KTH Royal Institute of Technology - SE, Los Alamos National Laboratory - US, Princeton Plasma Physics Laboratory - US, General Atomic in San Diego - US, University of Wisconsin in Madison - US, Naka Fusion Institute - J, and other). Completed in 1992, the machine presents unique technological features. Massimo Guarnieri worked within the Magnetic System Group to the design and construction of the large windings which form the RFX Magnetic System, consisting of: Magnetizing Winding (40 coils with diameters up to 8 m, rated of 50 kA, 200 kV, capable of delivering 75 MJ with a peak power of 10 GW, to induce plasma currents of 2 mega-amps); Primary winding (16 coils with diameters up to 4 m, rated 6.25 kA, 17.5 kV, 1 MJ, 109 MW, to confine the plasma); Toroidal winding (48 coils with diameters of 1 m, rated 18.3 kA, 7 kV, 128 MW, also to confine the plasma). He conceived and developed original numerical tools, capable of studying and automatically optimizing the coil section shapes and dimensions to meet the challenging magnetic specifications. He then participated in managing the contracts with the supplying companies ABB, TIBB, Alsthom, and Schneider, respectively, with a total expenditure of over 10 billion lire in 1990 (11 million Euro of 2022). In addition, he conceived, designed and supervised the construction of the complex multi-variable control and protection system of the whole RFX machine (built by Siemens). In the RFX project, he held positions of increasing responsibility becoming the leader of the Magnetic System Group, whose major tasks are managing the windings operations during the experimental sessions and studying future implementations and upgrades.

In the following years, he expanded his interests on computational electromagnetism, working at the development of innovative numerical formulations applied to coupled field problems (electromagnetics combined to mechanical and thermal fields). These methods have found application in the industrial field (electromechanical devices, heat treatment of materials) and in the biomedical field (hyperthermic treatments of neoplasms). In the framework of this research, he created the "Computational Electric Engineering Laboratory" at the Industrial Engineering Department (DII) of UNIPD in 2002.

In the last 2 years he has focused his research activity on renewable sources and energy storage, leading a research group for which he has created the "Electrochemical Energy Storage and Conversion Laboratory" – EESCoLab at DII of UNIPD in 2006. The research activities include both numerical investigations and experimental campaigns and regard the design and development of flow batteries, closed batteries (Li-ion, Lead-acid, ...), fuel cells and electrolyzers, as well as mobile electric powertrains. Notably, EESCoLab built and put into operation IS-VRFB, an industrial-experimental vanadium redox flow battery (VFB) rated 9kW and 27kWh, which was conceived for scaling up advanced technology and engineering of flow batteries and achieved world-class performance in terms of current and power densities. The technologies investigated in EESCoLab stand as highly strategic in the present international geopolitical energy framework, being expected to play a pivotal role in the expansion of renewable resources and in the phasing out of fossil fuels, both for stationary applications, combined with renewable sources in smart grids, and mobile for electric propulsion in electric vehicles and boats. The mission of EESCoLab is to develop new technologies to be transferred to the industrial world. These include, but are not limited to, the development of universal stack of next generation flow batteries (suitable for any chemistry), engineering development for Li-ion systems for electric mobility, engineering development of hydrogen and fuel cells systems for both stationary and mobility services.

In parallel to the research activities above, he is studying extensively the History of Engineering and Technology since about twenty years. His commitment in this field has entailed his appointment as history columnist and editorial board member of the IEEE Industrial Electronics Magazine and as member and present chair of the History Activities Committee of the IEEE Italy Section.

Publications in the last 11 years

1. P. Alotto, **M. Guarnieri**, F. Moro: "Redox Flow Batteries for the storage of renewable energy: a review", Renewable & Sustainable Energy Reviews, vol. 29, Jan. 2014, pp. 325-335. DOI: 10.1016/j.rser.2013.08.001.
2. P. Alotto, **M. Guarnieri**: "Stochastic Methods for Parameter Estimation of Multiphysics Models of Fuel Cells", IEEE Transactions on Magnetics, Vol. 50 No. 2, IEEE Inc., New York (NY USA), art. 7017304, Feb 2014. DOI: 10.1109/TMAG.2013.2283889.
3. F. Moro, P. Alotto, **M. Guarnieri**, A. Stella: "Domain Decomposition with the Mortar Cell Method", Int. J. Numer. Model. - International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, John Wiley & Sons, Ltd., Volume 27, Issue 3, May-June 2014, Pages 461-471. DOI: 10.1002/jnm.1930.
4. **M. Guarnieri**: "The Conquest of the Atlantic", IEEE Industrial Electronics Magazine, Vol. 8, No. 1, pp. 53-55/67, March 2014, DOI: 10.1109/MIE.2014.2299492.
5. **M. Guarnieri**: "Motorizzazione elettrica alimentata da accumulatori", Invited Green Mobility Show 2014, Venice, Italy, March 28-29, 2014.

6. P. Alotto, E. Negro, V. Di Noto, **M. Guarnieri**: "Stochastic Methods for PEMFC Parameter Identification", Invited at 225th Meeting ECS, Orlando (FL), May 11-15, 2014, pg. 46.
7. P. Alotto, E. Negro, V. Di Noto, **M. Guarnieri**: "Numerical methods for understanding polymer fuel cell operation", Invited at 3rd Annual World Conference on Advanced Materials, WCAM 2014, Chongqing (China), June 06-09, 2014, pg. 293.
8. P. Alotto, E. Negro, V. Di Noto, **M. Guarnieri**, "A stochastic way to understand fuel cell materials", Invited The 7th German-Italian-Japanese Meeting of Electrochemists, Padova, Italy, June 14-16, 2014.
9. F. Gambato, F. Moro, **M. Guarnieri**: "Improving Microwave Cooking Performance by Source Phase Shifting", Proc. of IMPI 48 - Microwave Power Symposium, International Microwave Power Institute, New Orleans, Louisiana, USA, June 2014.
10. **M. Guarnieri**: "Once Upon a Time ... The Compass", IEEE Industrial Electronics Magazine, Vol. 8, No. 2, June 2014, pp. 60-63, DOI: 10.1109/MIE.2014.2316044.
11. D. Maggiolo, A. Marion, **M. Guarnieri**: "Lattice-Boltzmann modeling of water cumulation at the gas channel-gas diffusion layer interface in PEM fuel cells", Proc. of ASME 2014 12th Fuel Cell Science, Engineering & Technology Conference, Boston (MA), 30/06-02/07, July 2014.
12. **M. Guarnieri**: "Electricity in the age of Enlightenment", IEEE Industrial Electronics Magazine, Vol. 8, No. 3, pp. 60-63, September 2014. DOI: 10.1109/MIE.2014.2335431.
13. **M. Guarnieri**, "Hydrogen management and storage", Invited 5th International Symposium on Energy from Biomass and Waste, Venice, Italy, November 19th, 2014.
14. D. Maggiolo, A. Marion, **M. Guarnieri**: "Lattice-Boltzmann modeling of water cumulation at the gas channel-gas diffusion layer interface in polymer electrolyte membrane fuel cells", Journal of Fuel Cell Science and Technology, 11 (6), 061008 (2014); Paper No: FC-14-1083, Dec. 2014. DOI: 10.1115/1.4028952.
15. **M. Guarnieri**: "The Big Jump from the Legs of a Frog", IEEE Industrial Electronics Magazine, Vol. 8, No. 4, pp. 59-61+69, Dec. 2014. DOI: 10.1109/MIE.2014.2361237.
16. **M. Guarnieri**: "How the Genie of Electronics Sprung Out", IEEE Industrial Electronics Magazine, pp. 77-79, DOI: 10.1109/MIE.2014.2387945, Vol. 9, No. 1, March 2015.
17. F. Moro, **M. Guarnieri**: "Efficient 3D Domain Decomposition with Dual Basis Functions", Proc. 16th Biennial IEEE Conference on Electromagnetic Field Computation, CEFC 2014, 25-28 May 2014, Annecy (F). IEEE Transactions on Magnetics, Vol. 51 No. 3, IEEE Inc., New York (NY USA), March 2015, art. 7093529. DOI: 10.1109/TMAG.2014.2352034.
18. F. Moro, P. Alotto, A. Stella, **M. Guarnieri**: "Solving 3D Eddy Currents in Thin Shells of Any Shape and Topology", Proc. 16th Biennial IEEE Conference on Electromagnetic Field Computation, CEFC 2014, 25-28 May 2014, Annecy (F). IEEE Transactions on Magnetics, Vol. 51 No. 3, IEEE Inc., New York (NY USA), March 2015, art. 7093549. DOI: 10.1109/TMAG.2014.2359137.
19. **M. Guarnieri**, P. Alotto, "Stochastic strategies for multiple parameter identification in multiphysic Fuel Cell models", Invited Coupled Problems 2015 VI International Conference on Computational Methods for Coupled Problems in Science and Engineering, San Servolo, Venice, Italy, May 18-20, 2015.
20. F. Moro, A. Bertuccio, V. Fiorenzato, **M. Guarnieri**, M. Giomo, "Multiphysics Finite-Element Modelling of an All-Vanadium Redox Flow Battery for Stationary Energy Storage", Proc. Coupled Problems 2015 VI International Conference on Computational Methods for Coupled Problems in Science and Engineering, San Servolo, Venice, Italy, pp. 416-427, May 18-20, 2015.
21. F. Moro, **M. Guarnieri**, "Fast Construction of Matching Constraints for Three-Dimensional Domain Decomposition Methods with Non-Matching Grids", Proc. Coupled Problems 2015 VI International Conference on Computational Methods for Coupled Problems in Science and Engineering, San Servolo, Venice, Italy, May 18-20, 2015.
22. M. Morandin, S. Bolognani, P. Campostrini, A. Ferrari, **M. Guarnieri**, "Electric Waterborne Public Transportation in Venice: a Case Study", Proc. 2015 IEEE Transportation Electrification Conference and Expo - ITEC'15, art. 07165810, Dearborn/Detroit, June 14-17, 2015.
23. **M. Guarnieri**: "Two Millennia of Light: The Long Path to Maxwell's Waves", IEEE Industrial Electronics Magazine, Article number 7128828, pp. 54-56 + 60, Vol. 9, No. 2, June 2015. DOI: 10.1109/MIE.2015.2421754.
24. S. Bortolin, P. Toninelli, D. Maggiolo, **M. Guarnieri**, D. Del Col, "CFD study on electrolyte distribution in redox flow batteries", Proc. 33rd UIT Heat Transfer Conference, L'Aquila, Italy, June 22-24, 2015.
25. **M. Guarnieri**, P. Alotto, F. Moro, "Modeling the Performance of Hydrogen-Oxygen Unitized Regenerative Proton Exchange Membrane Fuel Cells for Energy Storage", Journal of Power Sources, vol. 297, no. 11, pp. 23-32, August 2015. DOI 10.1016/j.jpowsour.2015.07.067.
26. **M. Guarnieri**, "The rise of light", Proc. 2015 ICOHTEC/IEEE International History of High-Technologies and their Socio-Cultural Contexts Conference, HISTELCON 2015: The 4th IEEE Region 8 Conference on the History of Electrotechnologies, Tel Aviv, Israel. Article number 7307311, August 18-19 2015.

27. D. Maggiolo, F. Picano, A. Marion, **M. Guarnieri**, "Application of the Lattice-Boltzmann Method for Modeling All-Vanadium Redox Flow Batteries", Proc. IV International Conference on Particle-based Methods – Fundamentals and Applications - Particle 2015, pp. 579-589, Barcelona, Spain, Sept. 28-30, 2015.
28. **M. Guarnieri**: "Switching the Light: From Chemical to Electrical", IEEE Industrial Electronics Magazine, Vol. 9, No. 3, Article number 7271159, pp. 44-47, Sept. 2015. DOI: 10.1109/MIE.2015.2454038.
29. **M. Guarnieri**, F. Moro, A. Bertucco, V. Fiorenzato, M. Giomo, "A Multiphysics Finite-Element Performance Model of a Vanadium Redox Flow Battery", 228th Meeting ECS, Phoenix, AZ, Oct. 11-16, 2015.
30. D. Maggiolo, D. Fauri, S. Da Lio, A. Bertucco, D. Del Col, **M. Guarnieri**, "A low-losses topology for VRFB stacks", 228th Meeting ECS, Phoenix, AZ, Oct. 11-16, 2015.
31. D. Maggiolo, F. Picano, **M. Guarnieri**, "A Lattice-Boltzmann Model of mass transport in the diffusion layers of Vanadium Redox Flow Batteries", 228th Meeting ECS, Phoenix, AZ, Oct. 11-16, 2015.
32. S. Bortolin, P. Toninelli, D. Maggiolo, **M. Guarnieri**, D. Del Col, "CFD study on electrolyte distribution in redox flow batteries", Journal of Physics: Conference Series, 655 (1), article 012049, Nov. 2015, DOI: 10.1088/1742-6596/655/1/012049.
33. **M. Guarnieri**: "More light on information", IEEE Industrial Electronics Magazine, Article number 7128828, pp. 58-61, Vol. 9, No. 4, Dec. 2015. DOI: 10.1109/MIE.2015.2485182.
34. M. Alb, P. Alotto, **M. Guarnieri**, C. Magele, W. Renhart, "Real-time pose detection for magnetic-assisted medical applications by means of a hybrid deterministic/stochastic optimization method", IEEE Transaction on Magnetics, Vol. 52, No 3, Article number 5100104, March 2016. DOI: 10.1109/TMAG.2015.2480156.
35. **M. Guarnieri**, "The rise of light – discovering its secrets", Proc. IEEE – Scanning our past, vol. 104 (2), (2016), pp. 467-473, Feb. 2016. DOI: 10.1109/JPROC.2015.2513118.
36. F. Moro, A. Bertucco, M. Giomo, **M. Guarnieri**, "A Multi-dimensional Vanadium Redox Flow Batteries Performance Model accounting for species crossover", EMN Meeting on Batteries, Orlando USA-FL, 21-25 Feb., 2016.
37. **M. Guarnieri**: "The Unreasonable Accuracy of Moore's Law", IEEE Industrial Electronics Magazine, Article number 7128828, pp. 40-43, Vol. 10, No. 1, March 2016. DOI:10.1109/MIE.2016.2515045.
38. G. Mazzucco, F. Moro, **M. Guarnieri**: "Modelling a coupled thermoelectromechanical behaviour of contact elements via fractal surfaces", Modelling and Simulation in Engineering, vol. 2016, # 5219876, pp. 1–15, 2016, DOI: 10.1155/2016/5219876.
39. **M. Guarnieri**: "A Lesson from Past Energy Crises", IEEE Industrial Electronics Magazine, Article number 7497634, pp. 59-63, Vol. 10, No. 2, June 2016. DOI: 10.1109/MIE.2016.2554663.
40. **M. Guarnieri**: "A Question of Coherence", IEEE Industrial Electronics Magazine, Vol. 10, No. 3, pp. 54-58, Article number 7575780, Sept. 2016. DOI: 10.1109/MIE.2016.2590718.
41. D. Maggiolo, F. Picano, **M. Guarnieri**, "Flow and dispersion in anisotropic porous media: a Lattice-Boltzmann study", Physics of Fluids, 28 (10), (2016): 102001, DOI: 10.1063/1.4963766, Oct 2016.
42. **M. Guarnieri**, E. Negro, V. Di Noto, P. Alotto, "A Selective Hybrid Stochastic Strategy for Fuel-Cell Multi-Parameter Identification", Journal of Power Sources 332 (2016) 249–264, Nov. 2016. DOI: 10.1016/j.jpowsour.2016.09.131.
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