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CURRENT TOPICS OF MY RESEARCH AND PUBLICATIONS

My research interests are in the area of energy and optimization of the energy resources both for industrial processes (e.g. compressed air systems and use of efficient technologies) and for the residential and tertiary sector (e.g. models for energy planning, Codes for the building environment: the energy requirements and microgrids). Currently, I am responsible for those research activities in the field of energy management and have been supervised the works of several PhD students and a post-doc researcher who work on hybrid micro-grid, energy systems planning and optimization of industrial facilities (compressed air). My scientific publications deal with (i) the role of renewables and the feasibility of hybrid micro-grids in developing countries, remote settings and portable renewable generators with storage; (ii) compressed air systems and their optimization; and (iii) a new energy system model for the sustainability of the Lombardy Region. Recently I have been the scientific responsible person for the elaboration of the next Sustainable Energy and Climate Action Plan (SECAP2019).

I organized a special session at the International conference IEEE-IECON 2013 *SS59 Systems and devices for promoting energy efficiency in compressed air system* and since 2017 I have been co-charing the IEEE-ECCE WiE events and activities. I am reviewer for the EU program H2020 and for the national research program (PRIN) and regional (FINPIEMONTE). Since January 2018 I am Associate Editor of IEEE-Transactions on Industry Applications Since April 2018 I am associate professor qualified (ASN qualified at national level). Since August 2018 I am Senior member of IEEE-IAS For the term 2019/2020, I am Society Liaison in IEEE-Women in Engineering (WiE) for the Industry Applications Society. Since 2002 I am tenured assistant professor at the University of Pavia

I am the Scientific Head of LABAC (laboratorio per l'efficienza energetica dei sistemi aria compressa) and I have been supervising more than 100 among bachelor, master and PhD theses. I authored more than 80 international publications (conferences and journals). In the following an excerpt from the full list.

1. Oriti, A. L. Julian, N. Anglani and G. D. Hernandez. 2018. Novel Economic Analysis to Design the Energy Storage Control System of a Remote Islanded Microgrid, IEEE Transactions on Industry Applications Vol 54 Issue 6 Nov/Dec.2018, pp 6332-6342, DOI: 10.1109/TIA.2018.285304.
2. N. Anglani, G. Oriti and M. Colombini, 2017. Optimized Energy Management System to Reduce Fuel Consumption in Remote Military Microgrids, in IEEE Transactions on Industry Applications, vol. 53, no. 6, pp. 5777-5785, Nov.-Dec. 2017. doi: 10.1109/TIA.2017.2734045
3. Fattori, F. Anglani, N. Staffell, I. Pfenninger, S. 2017. High Solar Photovoltaic Penetration in the Absence of Substantial Wind Capacity: Storage Requirements and Effects on Capacity Adequacy. Energy, Vol. 137, pp 193- 208, ISSN: 03605442 DOI 10.1016/j.energy.2017.07.007
4. Quartarone G., Anglani N. 2016. Improving the Energy Efficiency of Air Compressor Rooms: A Methodological Tool for the Topology Optimization of Air Compressor Rooms, IEEE Industry Applications Magazine, January/February, Vol 22, issue 1, pp 40-50, ISSN:1077-2618.
5. Fattori, F. Albini, D. Anglani, N. 2016. Proposing an open-source model for unconventional participation to energy planning, Energy Research and Social Science, Vol:15, pp 12-33, ISSN: 22146296 DOI: 10.1016/j.erss.2016.02.005.
6. Quartarone G., Anglani N. 2015. Simulation and performance comparison of a real time controller for a fixed speed multipressure compressor, IEEE Transactions on Industry Applications, Volume: 51 Issue: 1, pp 1-9, ISSN: 0093- 9994.
7. Fattori, F. Anglani, N. Muliere, G. 2014, Combining photovoltaic energy with electric vehicles, smart charging and vehicle-to-grid, Solar Energy, Volume 110, December 2014, Pages 438-451, ISSN 0038-092X, <http://dx.doi.org/10.1016/j.solener.2014.09.034>.

8. Muliere G., Anglani N. 2011. The Impact of Renewable Energy and Energy Efficient Technologies, what to choose in case of limited supportive actions: a case study. *International Journal of Energy and Environmental Engineering*. Vol. 2 (5), pp 83-94 ISSN: 2008-9163.
 9. Benzi F., Anglani N., Bassi E., Frosini L. 2011. Electricity Smart Meters Interfacing the Households, *IEEE Trans. in Industrial electronics*, Vol 58, Issue 10, Pages 4487-4494
 10. Anglani, N., Muliere, G. 2009. Answering the question of local biomass deployment: The use of energy modelling with case study for non-industrial customers. *Chemical Engineering Transactions*, 18, pp. 659-664. DOI: 10.3303/CET0918107.
- Check here for the full list <https://scholar.google.it/citations?user=kad1EOEAAA&hl=it&oi=ao>.

MAIN RESEARCH FUNDING

<i>ENI spa, San Donato -Italy</i>	2019-2020
<i>Feasibility study for a 100% renewable offshore microgrid: supporting upstream activities going carbon-free by 2050</i>	
<i>Confindustria Pavia - ProtoLab</i>	2019
<i>Optimization of the design and implementation of a portable photovoltaic generator with storage</i>	
<i>Comune di Pavia (Italy)</i>	2018-2019
<i>Assisting the Municipality in the elaboration of a Local energy, environmental, sustainable action plan against climate change</i>	
<i>ATLAS COPCO (Italy) and ATLAS COPCO (Belgium)</i>	2006; 2014-2015
<i>Italian white certificates and the assessment of the potential for steam expanders in the range of 150 ,à 250kW</i>	
<i>Adjustable speed compressors: methodologies for the accruing of white certificates for the italian market</i>	
<i>ATW (Italia)</i>	2011-2013
<i>Prototyping a machine extracting water from air (AWA Modula) (project leader of the WP on Design and size of the energy production unit of the microgrid) (presented at EXPO 2015 by the Swiss company Seas)</i>	
<i>ENEA</i>	2008- 2009-2010
<i>Opportunities of optimization in the production, distribution and use of compressed air in the most affected industrial sectors</i>	
<i>Electrical technologies potential in the industrial and tertiary sectors</i>	

EDUCATION, STUDY GRANTS AND AWARDS

- Recipient of the selective grant Pavia-Boston (University of Pavia) (one month in 2016 and three months in 2019)
hosted at Northeastern University, Boston MA (prof. Lehman and Amirabadi)
- Recipient of the grant Erasmus Outgoing Staff Mobility 2017/2018/2019
NTNU Trondheim, Norway - Nottingham University, UK
- Chair of International Summer School on Hybrid Microgrids 2016
University of Pavia and Fondazione Alma Mater Ticinensis
- Post Doc at Energy efficiency and Standards Group, LBNL 2000-2001
Lawrence Berkeley National Laboratory, Berkeley, CA (USA). Title: Opportunities to Improve Energy Efficiency and Reduce Greenhouse Gas Emissions in the U.S. Pulp and Paper Industry
- PhD defense , in *Electrical Engineering University of Pavia (1996-1998)* April 1999
Title: Modellizzazione e ottimizzazione di flussi energetici in impianti di processo e servizio
- B.sc and M.Sc in *Electrical Eng. (with Hons.)* June 1993
University of Pavia, Title: Tecniche di ottimizzazione applicate a strutture automobilistiche
- Best paper Third prize, selected by the *IEEE IAS Renewable and Sustainable Energy Conversion Systems Committee* 2016. *Anglani, N. Oriti, G. Colombini, M. Optimized Energy Management System to Reduce Fuel Consumption in Remote Military Microgrids*
Pavia, June 2, 2020

