

CURRICULUM VITAE – LISA BRANCHINI – July 2018

PERSONAL DATA

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EDUCATION AND PROFESSIONAL CAREER

- 10/2003-10/2006 **Bachelor in Energy and Nuclear Engineering** “cum laude”,
Alma Mater Studiorum - University of Bologna
- 10/2006-10/2008 **Master in Energy and Nuclear Engineering** “cum laude”, Alma
Mater Studiorum - University of Bologna
- 01/2011-07/2011 **Visiting Ph.D. Scholar** at the Penn State University, State College,
PA, USA, under the advisory of Emeritus Prof. Horacio Perez-
Blanco, Department of Mechanical and Nuclear Engineering. *Main
research topic related to the dynamic modelling of gas turbine and
the integration with renewable energy sources.*
- 01/2009-12/2012 **Ph.D. in Mechanical Engineering**, Alma Mater Studiorum -
University of Bologna. *PhD dissertation: Advanced Waste-to-
Energy Cycles*
- 01/2013-06/2018 **Postdoctoral fellow**, Department of Industrial Engineering, Alma
Mater Studiorum - University of Bologna.
- 03/2017-to date National **habilitation to be Associate Professor** for the discipline
09/C1– Fluid machines and energy systems for energy and
environment - at the Scientific Habilitation Concourse (ASN) del
Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR),

Call D.D. 1532/2016.

06/2018-to date

Assistant Professor (Academic discipline: ING-IND/08 Fluid Machinery) at the Department of Industrial Engineering (DIN) , group of Fluid Machines and Energy systems, University of Bologna.

SCIENTIFIC LEADERSHIP PROFILE

LB scientific activity is focused on the thermodynamics of advanced and innovative energy systems, advanced gas turbines, CHP and micro-CHP systems, renewable based and waste heat recovery technologies. She is currently working as Assistant Professor at the Fluid Machines and Energy Systems group of DIN, where she carries out both numerical and experimental research activities. She is one of the coordinator of the “Laboratory of Technologies for Micro-CoGeneration” developed in the framework of the CIRI-EA, financed by POR-FESR 2014-2020. Within this lab, research is currently carried out by implementing test benches and developing numerical and experimental studies on micro-generators, with special reference to the Organic Rankine Cycle technology.

PhD ACTIVITIES, SUMMARY

- Set-up of a research collaboration with HERA- power plant division (a leader multi-utility company in Italy) on novel approaches to maximize the conversion of municipal solid waste into energy.
- Design and modelling the integration between Waste-To-Energy and gas turbine power plants.
- Propose and investigate two basic types of hybrid dual-fuel combined cycle arrangements: (i) steam/water side integration and (ii) windbox repowering.
- Thermodynamic investigation on optimal WTE-GT plant match in order to maximize steam generation, power output and minimize GT discharge outlet temperature.
- Discuss the issue of power output allocation and conversion efficiency for a multi-fuel integrated system. Define several performance indexes to quantify the performance of a multi-fuel integrated system.
- Design and modelling the repowering of existing WTE power plant with GT units.

PhD Internship at the Penn State University main topics:

- Gas turbines dynamic modelling in order to account for start-up/shut-down and ramp rate limitations.
- Modelling the integration between GT units and renewable energy sources in order to smooth out non-programmable renewables variabilities.
- Assess the feasibility to integrate GTs and wind in order to provide firm power to the grid: GTs operational constrains included in the model of the integrated system in order to correctly demonstrate how the renewable variability stresses the turbine performance.

POSTDOCTORAL ACTIVITIES, SUMMARY

- technologies and processes for the recovery of energy from waste and residues
- production of electricity and cogeneration from biomass and non-conventional fuels
- gas turbines and combined cycles
- coproduction of synthetic fuels and electricity
- technologies, processes and strategies to mitigate the greenhouse effect
- simulation and optimization of cogeneration systems, with and without district heating
- Optimization of the generators set and the grid management in a poli-generation grid
- design and optimization of small scale plug and play process for the generation of liquefied natural gas (LNG)

HONORS AND AWARDS

- Awarded in 2015 with the “**John P. Davis Award**” by the ASME, for a study on gas turbine, selected among 1051 papers of that year, *“in recognition of the technical paper that most significantly describes new or continuing gas turbine applications; identifies planning, installation, operating and/or maintenance problems and their solutions; and exemplifies candid exposure of real-world problems and solutions and is judged, therefore, to be of exceptional value to others supplying or using gas turbines and their support systems”*.
- Winner of the “**Best Paper Award**”, form the Industrial and Cogeneration Committee of the ASME-IGTI, for a papers presented at the ASME Turbo Expo 2015.
- Selected in 2015 as “Pioneer” for the European project CLIMATE-KIC Pioneers Into Practice Program.

- Winner in 2014 of the “**Green Energy Startup**” by Aster - the Consortium for innovation and technology transfer of Emilia-Romagna- for regional projects of enterprise in the sector of the renewable energies.
- Awarded in 2012 with the “**Young Engineer Travel Award**” by the ASME, for a study on gas turbine integrated with renewable non programmable sources.
- Awarded in 2012 with the “**Best PhD Thesis**” by the University of Ferrara, Italy.

INDICATORS OF ESTEEM/EDITORIAL ACTIVITIES

- Since 2017 **Co-Guest Editor** for “Applied-Science (ISSN 2076-3417) - Special Issue: Simulation, Analysis, Optimization and New Challenges of District Heating and Cooling Networks”;
- **Referee** for various international Journals, mainly: Applied Energy; Energy; Energy Conversion and Management; Applied Thermal Engineering; International Journal of Hydrogen Energy, Energies; Entropy; Journal of Power Sources;
- **Member of the ASME** (American Society of Mechanical Engineers) and member of the ASME committees “Industrial and Cogeneration” and “Oil and Gas applications”;

CONFERENCES ORGANIZATION

- Since 2012, Chair and Co-chair of the “Industrial and cogeneration Committee”;
- Member of the Local Organizing Committee and of the Scientific secretariat of the 68th National Congress Italian thermo-technical Association - ATI, 2013.
- Organizer and speaker of the tutorial of basics: “New frontiers and challenges in polygeneration grids”, Turbo expo 2018, June 11-15, 2018, Lillestrøm (Oslo), Norway.

PUBLICATION SUMMARY

- As for July 2018: **13 articles** in peer-reviewed international journals; **37 publications** in international conference proceedings; **17 publications** in national conference proceedings; **H-Index = 10** (source Scopus), **11** (Google Scholar).

- **Author of a monograph** titled “Waste-to-Energy.- Advanced Cycles and New Design Concepts for Efficient Power Plants”, Springer International Publishing, 2015, eBook ISBN: 978-3-319-13608-0, doi: 10.1007/978-3-319-13608-0, Hardcover ISBN:978-3-319-13607-3, Softcover ISBN: 978-3-319-35246-6.

INTERNATIONAL CONFERENCES ATTENDANCE

List limited to conferences with oral presentations:

- **ASME-ATI-UIT 2010** – Conference on Thermal and Environmental Issues in Energy Systems – May 16–19, 2010, Sorrento, Italy;
- **ASME Turbo Expo 2010** – Turbine Technical Conference and Exposition – June 14–18, 2010, Glasgow, Scotland;
- **ASME Turbo Expo 2011** – Turbine Technical Conference and Exposition – June 6–10, 2011, Vancouver, Canada;
- **ASME Turbo Expo 2012** – Turbine Technical Conference and Exposition – June 11–15, 2012, Copenhagen, Denmark;
- **ICAE 2013** - Fifth International Conference on Applied Energy– July 1–4, 2013, Pretoria, South Africa;
- **ICAE 2014** - Sixth International Conference on Applied Energy– May 30 – June 2, 2014, Taipei, Taiwan;
- **ASME Turbo Expo 2014** – Turbine Technical Conference and Exposition – June 16–20, 2014, Düsseldorf, Germany;
- **ASME Turbo Expo 2015** – Turbine Technical Conference and Exposition – June 15–19, 2015, Montreal, Canada;
- **ASME Turbo Expo 2017** – Turbine Technical Conference and Exposition – June 26–30, 2017, Charlotte, NC, USA;
- **ORC2017** - International Seminar on ORC Power Systems, 13-15 September 2017, Milano, Italy;
- **ASME Turbo Expo 2018**– Turbine Technical Conference and Exposition – June 11–15, 2018, Lillestrøm (Oslo), Norway.

TEACHING AND MENTORING EXPERIENCE

- **Courses:** since 2016 professor of “Energy systems” a MS course at the University of Bologna. In 2014 professor of “Advanced Energy Systems and Cogeneration” a MS course at the University of Bologna.
- **Mentoring:** co-advisor of 22 master students and 4 under-graduate students; assisted the supervision of 1 PhD.
- From 2011 to 2014 **Tutor** of the 2nd level Professional Master's Programme of the University of Bologna in collaboration with ENI/Tecnomare “Design of Oil&Gas power plants”

PARTICIPATION IN FUNDED RESEARCH PROJECTS

Most relevant projects

- Coordinator of the “Laboratory of Technologies for Micro-CoGeneration” developed in the framework of the CIRI-EA, financed by **POR-FESR 2014-2020** *Topic:* small scale and low-grade heat resources and sustainable energy conversion technologies.
- Responsible of a scientific collaboration, since 2013, between University of Bologna (DIN) and **TURBODEN** company (Mitsubishi Heavy Industries group), on the topic of ORC application to natural gas compression stations.
- Participant in the scientific collaboration between University of Bologna (CIRI-EA) and **GRAF** company (oil and gas division), on the topic of fluid machines for cryogenic applications, in the framework of POR-FESR 2014-2020 regional project.
- Participant in the Project “**CLEANPORT** – Study and design of LNG systems on board of ships” 2016-2018 funded by POR-FESR 2014-2020 regional project.
- Participant in the Project “**EFFICITY** – Efficient energy systems for smart urban districts” 2017-2018 funded by POR-FESR 2014-2020 regional project.
- Participant in the Project “**FRIMAG** – Development of a refrigerator prototype for food storage” 2017-2018 funded by POR-FESR 2014-2020 regional project.
- Participant in the scientific collaboration between University of Bologna (DIN) and **ENEA** on the topic of “strategies for optimal load allocation in a poli-generation grid”, in the framework of Ricerca di Sistema, AdP MiSE-CNR, PAR 2015.
- Participant in the scientific collaboration between University of Bologna (DIN) and **ENEA** on the topic of “Design of smart energy districts”, in the framework of Ricerca di Sistema, AdP MiSE-CNR, PAR 2013-14.

- Participant in the industrial research project "Pilot program for the experimental test of hydrogen technologies to mitigate the greenhouse effect", in the framework of an Agreement between University of Bologna and **Ravenna municipality**, 2011-2012.
- Participant in the scientific collaboration between University of Bologna (DIN) and **CNR** (ITAE) on the topic of "Thermal integration of a SOFC power generator and a Na-NiCl₂ battery for CHP domestic application" in the framework of Ricerca di Sistema, AdP MSE-CNR, PAR 2009-10.
- Participant in the scientific collaboration between University of Bologna (DIN) and **CNR** (ITAE) on the topic of "Design and analysis of complex generation system for domestic utilities", in the framework of Ricerca di Sistema, AdP MSE-CNR, PAR 2008.
- Participant in National Research Project **PRIN 2008** prot. 2008X733PJ_002 (Principal investigator Prof. G Bidini, University of Perugia), on the topic of "biogas derived syngas combustion in micro-turbines".
- Participant in the industrial research project with **Nova Somor S.r.l.** on the topic "Thermodynamic analysis and modelling of an hydraulic piston pump fed by low grade heat sources".
- Participant in the industrial research project with **ENI** on the topic "Solutions for improving the energy efficiency of the natural gas compressor station of Casalborsetti", project FAM-ENI 2016-17.
- Participant in the industrial research project with **PowerCrop (Maccaferri Group)** on the topic "Design, off-design and dynamic analysis of the integrated power plant of Macchiareddu" 2014-15.
- Participant in the industrial research project with **HERA S.p.A - Divisione Ingegneria Grandi Impianti** "Combining waste-to-energy steam cycle with gas turbine units", project FAM-HERA 2010-13.

ADDITIONAL INFO

- From 09/2015 to 02/2016 period of compulsory maternity leave.

LIST OF PUBLICATIONS**Peer-reviewed publications on international journals**

- [1] R. K. Bhargava, L. Branchini, F. Melino, A. Peretto. *Available and future gas turbine power augmentation technologies: techno-economical analysis in selected climatic scenarios*. **Journal Of Engineering for Gas Turbine And Power**, 2012, Vol. 134, Issue 10, pp: 102001-1 (11 pages), ISSN: 0742-4795 (print), 1528-8919 (online). doi: 10.1115/1.4007126 - Corresponding Author
- [2] L. Branchini, A. De Pascale, A. Peretto. *Systematic comparison of ORC configurations by means of comprehensive performance indexes*, **Applied Thermal Engineering**, 2013, Vol. 61, Issue 2, pp. 129–140. doi: 10.1016/j.applthermaleng.2013.07.039
- [3] F. Campana, M. Bianchi, L. Branchini, A. De Pascale, A. Peretto, M. Baresi, A. Fermi, N. Rossetti, R. Vescovo. *ORC Waste Heat Recovery in European Energy Intensive Industries: Energy and GHG Savings*. **Energy Conversion and Management**, 2013, Vol. 76, pp. 244–252. doi: 10.1016/j.enconman.2013.07.041
- [4] M. Bianchi, L. Branchini, A. De Pascale. *Combining waste-to-energy steam cycle with gas turbine units*. **Applied Energy**, 2014, Vol. 130, pp. 764–773. doi: 10.1016/j.apenergy.2014.03.028. - Corresponding Author
- [5] M. Bianchi, L. Branchini, A. De Pascale, A. Peretto. *Application of Environmental Performance Assessment of CHP Systems with Local and Global Approaches*. **Applied Energy**, 2014, Vol. 130, pp. 774–782. doi: 10.1016/j.apenergy.2014.04.017.
- [6] M. Bianchi, L. Branchini, C. Ferrari, F. Melino. *Optimal size of grid-independent hybrid photovoltaic-battery power systems for household sector*. **Applied Energy**, 2014, Vol. 136, pp. 805-816, doi: 10.1016/j.apenergy.2014.07.058 - Corresponding Author
- [7] D. Beevers, L. Branchini, V. Orlandini, A. De Pascale, H. Perez-Blanco. *Pumped Hydro Storage Plants with Improved Operational Flexibility using Constant Speed Francis Runners*. **Applied Energy**, 2015, Vol. 137, pp. 629–637. doi: [10.1016/j.apenergy.2014.09.065](https://doi.org/10.1016/j.apenergy.2014.09.065).
- [8] M. Bianchi, L. Branchini, S. Cesari, A. De Pascale, F. Melino. *Repowering existing under-utilized WTE power plant with gas turbines*. **Applied Energy**, 2015, Vol. 160, pp. 902–911. doi: [10.1016/j.apenergy.2015.04.076](https://doi.org/10.1016/j.apenergy.2015.04.076)- Corresponding Author
- [9] V. Antonucci, L. Branchini, G. Brunaccini, A. De Pascale, M. Ferraro, F. Melino, V. Orlandini, F. Sergi. *Thermal integration of a SOFC power generator and a Na-NiCl₂ battery for CHP domestic application*. **Applied Energy**, 2017, Vol. 185, pp. 1256–1267, doi: 10.1016/j.apenergy.2016.04.051
- [10] M. A. Ancona, M. Bianchi, L. Branchini, A. De Pascale, F. Melino, A. Peretto, J. Rosati, L. B. Scarponi. *From solar to hydrogen: Preliminary experimental investigation on a small scale facility*. **International**

Journal of Hydrogen Energy, 2017, Vol. 42, Issue 33, pp. 20979-20993, doi: 10.1016/j.ijhydene.2017.06.141- Corresponding Author

- [11] M. A. Ancona, M. Bianchi, L. Branchini, A. De Pascale, F. Melino, M. Mormile, M. Palella, L. B. Scarponi. *Investigation on small-scale low pressure LNG production process*. **Applied Energy**, 2017, Article in Press, doi:10.1016/j.apenergy.2017.08.084
- [12] M. A. Ancona, F. Baldi, M. Bianchi, L. Branchini, F. Melino, A. Peretto, J. Rosati. *Efficiency Improvement on a Cruise Ship: Load Allocation Optimization*. **Energy Conversion and Management**, 2018, Vol.164, pp: 42–58, doi:10.1016/j.enconman.2018.02.080
- [13] M. A. Ancona, M. Bianchi, L. Branchini, A. De Pascale, F. Melino, M. Mormile, M. Palella. *On-Site LNG Production at Filling Stations*. **Applied Thermal Engineering**, 2018, Vol. 137, pp: 142-153, doi:10.1016/j.applthermaleng.2018.03.079.

Monograph

- [14] L. Branchini, *Waste-to-Energy.- Advanced Cycles and New Design Concepts for Efficient Power Plants*, **Springer International Publishing**, 2015, eBook ISBN: 978-3-319-13608-0, doi: 10.1007/978-3-319-13608-0, Hardcover ISBN:978-3-319-13607-3, Softcover ISBN: 978-3-319-35246-6.

Peer-reviewed publications on international conference (oral presentation)

- [15] M. Bianchi, L. Branchini, F. Melino. *Cycle Upgrade For Waste-To-Energy Power Plants*. **Proceedings of ASME-ATI-UIT 2010** Conference on Thermal and Environmental Issues in Energy Systems, 16 – 19 May, 2010, Sorrento, Italy, Vol. 1, pp. 113-120, ISBN/ISSN: 978-884672659-9
- [16] M. Bianchi, R. K. Bhargava, L. Branchini, M. A. Chaker, A. De Pascale, F. Melino, A. Peretto. *Gas Turbine Power Augmentation Technologies: A Systematic Comparative Evaluation Approach*. **Proceedings of the ASME Turbo Expo 2010**, June 14 -18 2010, Glasgow, Scotland; Vol. 5, pp. 99-107; ISBN: 978-0-7918-4400-7. doi: 10.1115/GT2010-22948
- [17] R. K. Bhargava, L. Branchini, F. Melino, A. Peretto. *Available and future gas turbine power augmentation technologies: techno-economical analysis in selected climatic scenarios*. **Proceedings of the ASME Turbo Expo 2012**, June 11 – 15, 2012, Copenhagen, Denmark Vol. 3, pp. 847-858, ISBN: 978-0-7918-4469-4. doi: 10.1115/GT2012-68332
- [18] L. Branchini, H. Perez-Blanco. *Handling Wind Variability Using Gas Turbine*. **Proceedings of the ASME Turbo Expo 2012**, June 11 – 15, 2012, Copenhagen, Denmark, Vol. 6, 2012, pp. 727-734, ISBN: 978-079184472-4, doi: 10.1115/GT2012-68045

- [19] L. Branchini, H. Perez-Blanco. *Computing Gas Turbine Fuel Consumption To Firm Up Wind Power*. **Proceedings of the ASME Turbo Expo 2012**, June 11 – 15, 2012, Copenhagen, Denmark, Vol. 6, 2012, pp. 735-741, ISBN: 978-079184472-4, doi: 10.1115/GT2012-68046
- [20] M. Bianchi, L. Branchini. *Advanced Waste-to-energy Power Plant: Integration With Gas Turbine*. **Proceedings of the 4th International Conference on Applied Energy ICAE 2012**, July 5-8, 2012, Suzhou, China, Paper ID: ICAE2012-A10330
- [21] M. Bianchi, L. Branchini, A. De Pascale. *Combining waste-to-energy steam cycle with gas turbine units*. **Proceedings of the 5th International Conference on Applied Energy ICAE 2013**, Pretoria, South Africa, July 1-4 2013, Paper ID: ICAE2013-336.
- [22] M. Bianchi, L. Branchini, N. Cavina, A. Cerofolini, A. De Pascale, F. Melino. *Wind-Hydro-Gas Turbine Unit Commitment to Guarantee Firm Dispatchable Power*. **Proceedings of the ASME Turbo Expo 2014**, Vol. 3B, June 11 -15, Dusseldorf, Germany. pp. (13 pages). ISBN: 978-0-7918-4566-0, doi:10.1115/GT2014-25049
- [23] M. Bianchi, L. Branchini, S. Cesari, A. De Pascale. *Repowering Existing Under-Utilized WTE Power Plant with Gas Turbine*. **Proceedings of the 6th International Conference on Applied Energy – ICAE2014**, 30 May - 2 June 2014, Taipei, Taiwan, Energy Procedia (2014) , Vol. 61, pp. 238 – 241, doi: 10.1016/j.egypro.2014.11.1097
- [24] R.K. Bhargava, M. Bianchi, L. Branchini, A. De Pascale, V. Orlandini. *Organic Rankine cycle system for effective energy recovery in offshore applications: a parametric investigation with different power rating gas turbines*. **Proceedings of ASME Turbo Expo 2015**, Vol. 3. June 15-19, Montreal, Canada. 2015, . doi:10.1115/GT2015-42292
- [25] M. Bianchi, L. Branchini, A. De Pascale, F. Melino, V. Orlandini, A. Peretto, D. Archetti, F. Campana, T. Ferrari, N. Rossetti. *Energy Recovery In Natural Gas Compressor Stations Taking Advantage Of Organic Rankine Cycle: Design Analysis*. **Proceedings of the ASME Turbo Expo 2017**, June 26-30, Charlotte, USA. doi: 10.1115/GT2017-64245
- [26] M. Bianchi, L. Branchini, A. De Pascale, F. Melino, V. Orlandini, A. Peretto, D. Archetti, F. Campana, T. Ferrari, N. Rossetti. *Techno-Economic Analysis of ORC in Gas Compression Station Taking Into Account Actual Operating Conditions*. **Proceedings of the 4th International Seminar on ORC Power Systems ORC 2017**, 13-15 September 2017, Milano, Italy, Energy Procedia, vol. 129, pp. 543-550, doi: 10.1016/j.egypro.2017.09.182

Peer-reviewed publications on international conference

- [27] M. Bianchi, L. Branchini, A. De Pascale, F. Melino, A. Peretto. *NOx Reduction by Means of the Inlet Fogging Approach*. **Proceedings of the 20th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, ECOS 2007**, Padova , Italy, 25 - 28 June, 2007, vol. 1, pp. 649-658.

- [28] B. Belvedere, M. Bianchi, L. Branchini, F. Melino, A. Peretto. *Comparison of Available and Future Gas Turbine Power Augmentation Technologies for various climatic scenarios*. **Proceedings of ASME-ATI-UIT 2010** Conference on Thermal and Environmental Issues in Energy Systems, 16 – 19 May, 2010, Sorrento, Italy, Volume 1, pp. 101-106, ISBN/ISSN: 978-884672659-9
- [29] M. Bianchi, L. Branchini, A. De Pascale, S. Di Nocco. *Thermodynamic Investigation On Different ORC Configurations*. **Proceedings of the first International Seminar on ORC Power Systems ORC 2011**, September 22-23, 2011, Delft, Holland.
- [30] L. Branchini, A. De Pascale, A. Peretto. *Thermodynamic Analysis and Comparison of Different Organic Rankine Cycle Configurations*. **Proceedings of the 4th International Conference on Applied Energy ICAE 2012**, July 5-8, 2012, Suzhou, China, Paper ID: ICAE2012-A10333
- [31] M. Bianchi, L. Branchini, C. Ferrari, F. Melino. *Optimal size of grid-independent hybrid photovoltaic-battery power systems for household sector*. **Proceedings of the 5th International Conference on Applied Energy ICAE 2013**, 1-4 July, 2013, Pretoria, South Africa, Paper ID: ICAE2013-338
- [32] M. Bianchi, L. Branchini, A. De Pascale, A. Peretto. *Environmental performance assessment of CHP systems with avoided heat generator approach*. **Proceedings of the 5th International Conference on Applied Energy ICAE 2013**, 1-4 July, 2013, Pretoria, South Africa, Paper ID: ICAE2013-337
- [33] A. Tafone, J. Wronski, A. De Pascale, L. Branchini. *Theoretical investigation on advanced Organic Rankine Cycles*. **Proceedings of the 2nd International Seminar on ORC Power Systems ORC 2013**, October 7-8, 2013, Rotterdam, The Netherlands.
- [34] M. Bianchi, L. Branchini, A. De Pascale, F. Melino, A. Peretto, R. Vecchi. *PEM fuel cell system experimental performance analysis with evaluation of unreacted hydrogen, crossover and ageing*. **Proceedings of the Fifth European Fuel Cell Technology & Applications Conf., EFC2013**, Dec. 11-13, 2013, Rome, Italy, pp. 47-48.
- [35] R. K. Bhargava, M. Bianchi, L. Branchini, A. De Pascale, F. Melino, A. Peretto, E. Valentini. *Thermo-economic evaluation of ORC system in off-shore applications*. **Proceedings of the ASME Turbo Expo 2014**, Vol. 3A, June 11 -15, Dusseldorf, Germany. GT2014-25170, ISBN: 978-0-7918-4565-3, doi:10.1115/GT2014-25170
- [36] M. Bianchi, L. Branchini, A. De Pascale, F. Melino, A. Peretto. *Investigations on a Test Bench for Integrated ORC- FC Micro-CHP Energy Systems*. **Proceedings of the ASME Turbo Expo 2014**, Vol. 3B, June 11 -15, Dusseldorf, Germany. GT2014-26914 pp. V03BT26A013; (11 pages) ISBN: 978-0-7918-4566-0, doi:10.1115/GT2014-26914
- [37] M. Bianchi, L. Branchini, A. De Pascale, F. Melino. *Storage Solutions for Renewable Production in Household Sector*. **Proceedings of the 6th International Conference on Applied Energy – ICAE2014**. Energy Procedia Vol. 61 (2014), pp. 242 – 245. doi: 10.1016/j.egypro.2014.11.1098.

- [38] M. A. Ancona, L. Branchini, A. De Pascale, F. Melino. *Smart District Heating: Distributed Generation Systems' Effects on the Network*. **Proceedings of the 7th International Conference on Applied Energy – ICAE2015**. Energy Procedia vol. 75 (2015), pp. 1208 – 1213 doi: 10.1016/j.egypro.2015.07.157. WOS:000361030002009
- [39] M. A. Ancona, M. Bianchi, L. Branchini, A. De Pascale, F. Melino, V. Orlandini, A. Peretto. *Generation Side Management in Smart Grid*. **Proceedings of the ASME-ATI-UIT 2015**, Conference on Thermal Energy Systems: Production, Storage, Utilization and the Environment. 17 – 20 May, 2015, Napoli, Italy.
- [40] M. A. Ancona, M. Bianchi, L. Branchini, A. De Pascale, F. Melino, M. Mormile, M. Palella. *A novel small scale liquefied natural gas production process at filling stations: thermodynamic analysis and parametric investigation*. **Proceedings of the ASME Turbo Expo 2016**, June 13-17, Seoul, Korea, Vol. 9. ISBN: 978-0-7918-4987-3. doi:10.1115/GT2016-56463.
- [41] M. A. Ancona, M. Bianchi, L. Branchini, A. De Pascale, F. Melino, A. Peretto. *Thermo-economic analysis of a photovoltaic – fuel cell hybrid system with energy storage for CHP production in household sector*. **Proceedings of the ASME Turbo Expo 2016**, June 13-17, Seoul, Korea, Volume 3, ISBN: 978-0-7918-4974-3. doi:10.1115/GT2016-56461
- [42] M. Bianchi, L. Branchini, A. De Pascale, F. Melino, V. Orlandini, A. Peretto, F. Haglind, L. Pierobon. *Cogenerative Performance of a Wind – Gas Turbine – Organic Rankine Cycle Integrated System for Offshore Applications*. **Proceedings of the ASME Turbo Expo 2016**, June 13-17, Seoul, Korea, Vol. 3, ISBN: 978-0-7918-4974-3. doi:10.1115/GT2016-57167
- [43] M. A. Ancona, M. Bianchi, L. Branchini, A. De Pascale, F. Melino. *Performance Increase of a Small-Scale Liquefied Natural Gas Production Process by Means of Turbo-Expander*. **Proceedings of the 8th International Conference on Applied Energy – ICAE2016**. Beijing, China, Oct 8-11, 2016, Energy Procedia, Vol. 105, May 2017, pp. 4859-4865, doi:10.1016/j.egypro.2017.03.963
- [44] M. A. Ancona, M. Bianchi, L. Branchini, A. De Pascale, F. Melino, A. Peretto. *Experimental Investigation on a Solar/Hydrogen-Based Microgrid*. **Proceedings of the 8th International Conference on Applied Energy – ICAE2016**. Beijing, China, Oct 8-11, 2016, Energy Procedia, Vol. 105, May 2017, pp. 343-349, doi: 10.1016/j.egypro.2017.03.324
- [45] M. Bianchi, L. Branchini, A. De Pascale, V. Orlandini, S. Ottaviano, M. Pinelli, P.R. Spina, A. Suman. *Experimental Performance of a Micro-ORC Energy System for Low Grade Heat Recovery*. **Proceedings of the 4th International Seminar on ORC Power Systems ORC 2017**, 13-15 September 2017, Milano, Italy, Energy Procedia, vol. 129, pp. 899-906, doi: 10.1016/j.egypro.2017.09.096
- [46] M. A. Ancona, L. Branchini, A. De Pascale, F. Melino, B. Di Pietra. *Renewable Energy Systems Integration for Efficiency Improvement of a CHP Unit*. **Proceedings of the ASME Turbo Expo 2017**, June 26-30, Charlotte, USA. doi: 10.1115/GT2017-64193
- [47] F. Alberitni, C. Bennati, M. Bianchi, L. Branchini, F. Cugini, A. De Pascale, S. Fabbri, F. Melino, S. Ottaviano, A. Peretto, J. Rosati, M. Solzi. *Preliminary Investigation on a Rotary Magnetocaloric*

Refrigerator Prototype. Proceedings of the 9th International Conference on Applied Energy, ICAE2017, 21-24 August 2017, Cardiff, UK, Energy Procedia, Vol. 142, December 2017, pp: 1288-1293, doi: 10.1016/j.egypro.2017.12.487

- [48] M. Bianchi, L. Branchini, A. De Pascale, F. Melino, A. Peretto, L.B. Scarponi. *Simplified Model for PV Panels Performance Prediction. Proceedings of the 9th International Conference on Applied Energy, ICAE2017*, 21-24 August 2017, Cardiff, UK, Energy Procedia, Vol. 142, December 2017, pp:198-203, doi: 10.1016/j.egypro.2017.12.032
- [49] R. Belardinelli, M. Bianchi, L. Branchini, A. De Pascale, A. Dimaiuta, G. Mancini, F. Melino, S. Ottaviano, A. Peretto. *Preliminary Experimental Investigation on a Hydraulic Piston Pump Driven by a Solar Micro-ORC Prime Mover. Proceedings of SET Conference 2017*, July 17-20, 2017, Bologna, Italy.
- [50] M. A. Ancona, M. Bianchi, L. Branchini, A. De Pascale, F. Melino, S. Ottaviano, A. Peretto, L. B. Scarponi, *Heat Recovery From A Liquefied Natural Gas Production Process By Means Of An Organic Rankine Cycle, Proceedings of ASME Turbo Expo 2018: Turbomachinery Technical Conference and Exposition GT2018*, June 11-15, 2018, Lillestrøm (Oslo), Norway, GT2018-75370
- [51] M. A. Ancona, M. Bianchi, L. Branchini, A. Brilloni, A. De Pascale, F. Melino, A. Peretto, *Power To Ice: A Novel Approach To Stabilize Non-Programmable Renewable By Means Of Gas Turbine IACC, Proceedings of ASME Turbo Expo 2018: Turbomachinery Technical Conference and Exposition GT2018*, June 11-15, 2018, Lillestrøm (Oslo), Norway, GT2018-75216

Peer-reviewed publications on national conference (oral presentation)

- [52] M. Bianchi, L. Branchini , F. Melino, A. Peretto, P.R. Spina. *Il Fogging Come Strategia Per L'incremento Delle Prestazioni Di Turbine A Gas E Gruppi Combinati. Proceedings of 3rd Energy Management Conference - AIGE - Parma*, 4-5 Giugno 2009, ISBN 978-88-6261-088-9
- [53] M. Bianchi, L. Branchini , A. De Pascale, M. Falchetti, P. Fiore. *Advanced Waste-To-Energy steam cycles. 68th Conference of the Italian Thermal Machines Engineering Association, ATI2013*, Bologna, 11-13 Sept. 2013, Energy Procedia, vol. 45, 2014, pp: 1205- 1214, doi: 10.1016/j.egypro.2014.01.126
- [54] M. Bianchi, L. Branchini, A. De Pascale. *Performance indexes and output allocation for multi-fuel energy systems. 68th Conference of the Italian Thermal Machines Engineering Association, ATI2013*, Bologna, 11-13 Sept. 2013, Energy Procedia , vol. 45, 2014, pp: 32-41, doi: 10.1016/j.egypro.2014.01.005
- [55] M. Bianchi, L. Branchini, N. Cavina, A. Cerofolini, E. Corti, A. De Pascale, V. Orlandini, F. Melino, D. Moro, A. Peretto, F. Ponti. *Managing wind variability with pumped hydro storage and gas turbines. 68th Conference of the Italian Thermal Machines Engineering Association, ATI2013*, Bologna, 11-13 Sept. 2013, Energy Procedia vol. 45, 2014, pp: 22- 31, doi: 10.1016/j.egypro.2014.01.004

- [56] M. A. Ancona, M. Bianchi, L. Branchini, A. Brilloni, F. Catena, A. De Pascale, F. Melino, S. Ottaviano, A. Peretto, J. Rosati, L. B. Scarponi. *Produzione di LNG su piccola scala: il caso studio di GRAF. Efficienza energetica nei processi industriali e nel settore terziario - Giornata di Studio sui sistemi Energetici AIMSEA*, Ferrara, 7 Febbraio 2018, Castello estense (Comunicazione Orale).

Peer-reviewed publications on national conference (oral presentation)

- [57] M. Bianchi, L. Branchini, A. De Pascale, P. Fiore, A. Peretto. *Studio di un sistema ibrido per la valorizzazione energetica dei rifiuti. 67th Conference of the Italian Thermal Machines Engineering Association ATI 2012*– Trieste, 11-14 Settembre 2012
- [58] M. Bianchi, L. Branchini, F. Melino, A. Peretto. *Il Degrado delle Prestazioni delle Turbine Assiali in Seguito a Fouling del Compressore. IV Congresso Nazionale AIGE* – Roma, 26 - 27 Maggio 2010
- [59] M. Bianchi, L. Branchini, A. De Pascale, F. Melino, A. Peretto. *Preliminary Investigations on a Test Bench for Integrated Micro-CHP Energy Systems. 68th Conference of the Italian Thermal Machines Engineering Association, ATI2013*, Bologna, 11-13 Sept. 2013, Energy Procedia, Vol. 45, 2014, pp: 1275-1284, doi: 10.1016/j.egypro.2014.01.133
- [60] M. A. Ancona, M. Bianchi, L. Branchini, F. Melino. *District heating network design and analysis. 69th Conference of the Italian Thermal Machines Engineering Association, ATI2014* – Milan, Italy, September 10 – 12, 2014, Energy Procedia, Vol. 45, 2014, pp: 1225-1234, doi: 10.1016/j.egypro.2014.01.128
- [61] M. Bianchi, L. Branchini, A. De Pascale, F. Melino. *Storage Solutions for Renewable Production in Household Sector. 69th Conference of the Italian Thermal Machines Engineering Association, ATI2014* – Milan, Italy, September 10 – 12, 2014, Energy Procedia, Vol. 61, 2014, pp: 242-245, doi: 10.1016/j.egypro.2014.11.1098
- [62] M. A. Ancona, L. Branchini, B. Di Pietra, F. Melino, G. Puglisi, F. Zanghirella. *Utilities Substations in Smart District Heating Networks. 69th Conference of the Italian Thermal Machines Engineering Association, ATI2014* – Milan, Italy, September 10 – 12, 2014, Energy Procedia, vol. 82, pp. 584-590, ISSN: 1876-6102, doi: 10.1016/j.egypro.2015.11.876
- [63] L. Branchini, P. Cagnoli, A. De Pascale, F. Lussu, V. Orlandini, E. Valentini. *Environmental Assessment of Renewable Fuel Energy Systems with Cross-Media Effects Approach. 69th Conference of the Italian Thermal Machines Engineering Association, ATI2014*, Energy Procedia, vol. 81, 2015, pp. 655 – 664, doi: 10.1016/j.egypro.2015.12.050
- [64] M. Bianchi, L. Branchini, A. De Pascale, F. Melino, V. Orlandini, A. Peretto. *Pump hydro storage and gas turbines technologies combined to handle wind variability: optimal hydro solution for an Italian case study. 70th Conference of the Italian Thermal Machines Engineering Association, ATI2015*, Roma, 9-11 Sept. 2015, Energy Procedia, vol. 82, 2015, pp. 570–576, doi: 10.1016/j.egypro.2015.11.872

- [65] M. A. Ancona, M. Bianchi, L. Branchini, A. De Pascale, F. Melino, A. Peretto. *Thermodynamic Evaluation of Repowering Options for a Small-size Combined Cycle with Concentrating Solar Power Technology*. **70th Conference of the Italian Thermal Machines Engineering Association, ATI2015**, Roma, 9-11 Sept. 2015, Energy Procedia, vol. 82, 2015, pp. 584–590, doi: 10.1016/j.egypro.2015.11.876
- [66] M. A. Ancona, G. Antonioni, L. Branchini, A. De Pascale, F. Melino, V. Orlandini, V. Antonucci, M. Ferraro. *Renewable energy storage system based on a Power-to-Gas conversion process*. **71st Conference of the Italian Thermal Machines Engineering Association, ATI2016**, 14-16 September 2016, Turin, Italy. Energy Procedia vol. 101, 2016, pp. 854 – 861, doi: 10.1016/j.egypro.2016.11.108
- [67] M. A. Ancona, M. Bianchi, L. Branchini, A. De Pascale, F. Melino, V. Orlandini, S. Ottaviano, A. Peretto, M. Pinelli, P. R. Spina, A. Suman. *A Micro-ORC Energy System: Preliminary Performance and Test Bench Development*. **71st Conference of the Italian Thermal Machines Engineering Association, ATI2016**, 14-16 September 2016, Turin, Italy. Energy Procedia, vol. 101 (2016), pp. 814–821. doi: 10.1016/j.egypro.2016.11.103
- [68] M. Bianchi, L. Branchini, A. De Pascale, F. Melino, V. Orlandini, S. Ottaviano, A. Peretto, Pinelli, P. R. Spina, A. Suman. *Experimental Investigation with Steady-State Detection in a Micro-ORC Test Bench*. **72nd Conference of the Italian Thermal Machines Engineering Association, ATI 2017**, 6-8 September, Lecce, Italy, Energy Procedia, vol. 126, pp. 469-476, doi: 10.1016/j.egypro.2017.08.222

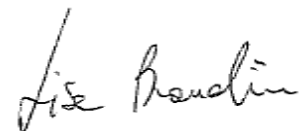
Other scientific publications

- [69] L. Branchini. *Advanced Waste-To-Energy Cycles*. **Tesi di Dottorato**, Università di Bologna, 2012 DOI: 10.6092/unibo/amsdottorato/4696.
- [70] L. Branchini. *Advanced Waste-To-Energy Cycles*, Poster and Extended Abstract, **Giornata di Studio in ricordo del Prof. Bettocchi**, Padova, SGE Editoriali, pp. 171-174, ISBN: 978-88-89884-21-8, Cento (FE), 19 settembre 2012.
- [71] M. Bianchi, L. Branchini, P. Cagnoli, A. De Pascale, F. Lussu, V. Orlandini, E. Valentini. *Valutazione di impatto ambientale da combustibili rinnovabili basata sull'approccio degli Effetti Incrociati*. **La Termotecnica**, Maggio 2015.
- [72] M. A. Ancona, M. Bianchi, L. Branchini, A. De Pascale, F. Melino, V. Orlandini, S. Ottaviano, A. Peretto, Pinelli, P. R. Spina, A. Suman, G. Zampieri. *Realizzazione di un banco prova per la caratterizzazione sperimentale di un sistema energetico micro-ORC*. **La Termotecnica**, Gen-Feb. 2017
- [73] L. Branchini. *Sintesi normativa sulla cogenerazione ad alto rendimento*. **Gestione Energia**, Rivista FIRE, 1/2016, pp:32-33

- [74] L. Branchini. *Quadro normativo della cogenerazione ad alto rendimento*. **Chimica Magazine**, Tecnologie per l'industria.

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