

PERSONAL INFORMATION



Francesco Calise

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Sex Male | Date of birth 25/10/1978 | Nationality Italian

WORK EXPERIENCE

2006-2014 **Assistant Professor**
University of Naples Federico II

▪ Lecturer and researcher

2014-2022 **Associate Professor**
University of Naples Federico II

▪ Lecturer and researcher

2022-Present **Full Professor**
University of Naples Federico II

▪ Lecturer and researcher

Education and Research

EDUCATION AND TRAINING

2002 **Laurea Degree, in Mechanical Engineering.**
University of Naples Federico II

▪ Energy savings in the milk industry". Supervisors: Proff. Vanoli and Dentice d'Accadia
2006 **Philosophy Doctor in Mechanical and Energy Engineering**

University of Naples Federico II

▪ Exergy analysis and thermoeconomic optimization of hybrid SOFC-GT power plants". Supervisors: Proff. Vanoli and Dentice d'Accadia

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s) English (fluent)

Job-related skills Fluent in the use of several simulation tools dealing with simulation of energy systems at industrial and residential level.

Digital skills Expert in the utilization of any application (excel, word, power point, etc). Expert in the use of several simulation and calculation tools (MATLAB, Fortran, TRNSYS, EES, ASPEN, Simulink, Comsol, etc)

Other skills **TEACHING ACTIVITIES**
2003-2005 Assistant Professor for several courses of "Applied Thermodynamics", "Heat Transfer", "Energy Systems", at the University of Naples Federico II.

- 2005- Present** Course of "Applied Thermodynamics" for MS students at the University of Naples Federico II.
- 2009- Present** Course of "Energy management" and "Environmental control" for MS students at the University of Naples Federico II.
- 2003-2008** Invited lectures on "fuel cells energy systems" at the Universities of Naples Federico II and Cassino.
- 2006- Present** Courses of "Energy Efficiency in buildings" for several private and public institutions
- 2006** Teacher of the course "Hydrogen Energy" at the "Università degli Studi del Sannio", Benevento, Italy
- 2013** Courses of "Solar Energy" and "Solar thermal systems" for PhD students at the University of Naples Federico II
- 2013** Courses of "Advanced Energy Systems" for PhD students at the University of Naples Federico II
- 2003- Present** He is supervisor of about 400 Master theses
- 2008** Co-Supervisor of a PhD Thesis at the University of Naples Federico II
- 2010** Co-Supervisor of a PhD Thesis at the University of Naples Federico II
- 2014** Course of "Advanced energy systems" for PhD students at the University of Naples Federico II
- 2017** Course of "Optimization for Energy Systems " for PhD students at the University of Naples Parthenope
- 2018-Present** Course of "Dynamic Simulation and Optimization for Energy Systems " for PhD students at the University of Naples Parthenope
- 2008-2017** Teacher of several courses for private companies, dealing with: "energy management", "energy efficiency", "HVAC systems", "solar systems", "renewable energy"
- 2013- Present** He is supervisor for traineeship programs for students of the Universities of Naples Federico II for several companies (AVProject, CIRA, TVP Solar, Helios, Fontel, IURO, PVR, MBDA, Di Mauro, Suite srl, etc)
- 2020** Course of "Energy Systems ", web learning at the University of Naples Parthenope
- 2020** Course of "Renewable Energy Technologies ", web learning at the University of Naples Parthenope
- 2021** Co-Supervisor of a PhD Thesis at the University of Naples Federico II

REVIEW/EDITORIAL ACTIVITIES

- 2006-Present** Reviewer for several international Journals, such as: Applied Thermal Engineering; International Journal of Thermodynamics, Energy Conversion and Management; Applied Energy; Energy, the international journal; etc
- 2016** reviewer for the Editorial Project Manager for the Energy Engineering list at Elsevier related to the book "SOLAR HEATING AND COOLING SYSTEMS: Fundamentals, experiments and applications"
- 2013** Reviewer for the Italian Ministry of Education for research projects PRIN.
- 2014** Reviewer for the Italian Ministry of Education for research projects SIR.
- 2015** Reviewer of a PhD thesis at the Università degli Studi di Napoli Parthenope
- 2015** Reviewer of a PhD thesis at the University Carlos III University di Madrid
- 2015** Reviewer for the evaluation of research projects Provincia Autonoma di Bolzano
- 2016** Reviewer for the Italian Ministry of Education.
- 2016** Reviewer for HRZZ Program for encouraging research and development activities in the field of climate change (PKP-06-2016), Croatian Science Foundation
- 2016** Reviewer of research projects for the Instituto Telecomunicacoes (Portugal)
- 2017** Reviewer for the Research Executive Agency of the European Commission, H2020-FETOPEN-1-2016-2017
- 2017** Member of a PhD thesis evaluation committee at AMERICAN UNIVERSITY OF BEIRUT, Faculty of Engineering and Architecture
- 2017** Reviewer of a PhD thesis at the University of Perugia
- 2018** Evaluator for the application at full professor of dr. Valerie Eveloy, at Khalifa University
- 2019** Reviewer for the evaluation of research projects, University of Padova
- 2019-2020** Vice-Chair for the evaluation of European Projects, for the Research Executive Agency of the European Commission, H2020-FETOPEN
- 2020** Evaluator for the application at research fellow, University of Insubria
- 2021** Reviewer for the evaluation of research projects, University of Modena and Reggio Emilia
- 2020-2021** Member of the Committee for the selection of the gas distribution company, amount of the contract 652 M€
- Member of the editorial board (including Special Issues) of the following International Journals:**
- Engineering Science and Technology, an International Journal (Elsevier) ISSN: 2215-0986
- Energies. ISSN 1996-1073;MDPI
- Thermo. (ISSN 2673-7264) MDPI
- Challenges, ISSN 2078-1547, MDPI
- Applied Sciences. ISSN 2076-3417;MDPI
- Sustainability (ISSN: 2071-1050), MDPI
- Current Alternative Energy (ISSN: 2405-4631). Bentham Science

Ultra Engineering. ISSN 2319-7161(PRINT). Exclusive Research Publishers
The Open Mechanical Engineering Journal. ISSN: 1874-155X. Bentham Open
TECHNOLOGY AUDIT AND PRODUCTION RESERVES. ISSN (print) 2226-3780, ISSN (on-line) 2312-8372.
SPC PC TECHNOLOGY CENTER
Journal of Aircraft and Spacecraft Technology, ISSN Print: 2523-1200 ISSN Online: 2523-1197
Material Science India; ISSN Print: 0973-3469, Online: 2394-0565
Eastern-European Journal of Enterprise Technologies; ISSN Print: 1729-3774, Online: 1729-4061
International Journal of Energy Optimization and Engineering. ISSN: 2160-9500; EISSN: 2160-9543
Established 2012; Published Quarterly;
American Journal of Engineering and Applied Sciences. ISSN Print: 1941-7020. ISSN Online: 1941-7039.
Science Publications;

Asian Journal of Energy. ISSN: 2356-6051 (Online)

2015 Member of the advisory editorial board for CRC Press book series SUSTAINABLE ENERGY DEVELOPMENTS

2017 Member of the Committee of Energies for the Travel Award

2017 Editor of the book "Solar Hydrogen Production", Elsevier

2020 Editor of the book "Polygeneration systems: design, processes and technologies", Elsevier

2021-2023 Member of the International Scientific Committee the Association "International Centre for Sustainable Development of Energy, Water and Environment Systems"

**Session Chairman for several conferences and organizer of several special sessions in international conferences:
Invited lectures**

2011 Invited Lecture "Exergy Analysis Of Solid Oxide Fuel Cell Systems" for PhD students at Aalto University (Finland)

2017 Conference BIWAES 2017 - Biennial International Workshop "Advances in Energy Studies" - Napoli, Italy, "Advanced renewable polygeneration systems producing electricity, heat, cool and water: dynamic simulations and thermo-economic optimization"

2019 Conference SEED 2019 -3rd International Conference on the Sustainable Energy and Environmental Development (SEED) – Krakow, Poland, "Polygeneration systems fed by renewables: a novel paradigm for a sustainable production of electricity, heat, cool and water"

2020 Conference CEER 2020 INTERNATIONAL CONFERENCE ON THE CLEAN ENVIRONMENT AND ENERGY RESEARCH, "Hybrid renewable energy systems for the sustainable production of electricity, heat, cool and water"

Member of the Scientific Committee of dozens international conferences

AWARDS

2016 best poster award for the paper Buonomano, A., Calise, F., Forzano, C., Palombo, A., Vicidomini, M., Solar heating and cooling systems for residential applications: a comparison among different system layouts and technologies, 11th Conference on Sustainable Development of Energy, Water and Environment Systems – SDEWES Conference, 4-9 Settembre 2016, Lisbon

2018 The paper (energies-218322, Francesco Calise, Massimo Dentice D'Accadia, Carlo Barletta, Vittoria Battaglia, Antun Pfeifer, Neven Duic, Detailed modelling of the deep decarbonisation scenarios with demand response technologies in heating and cooling sector: a case study for Italy. Energies, 2017, , 10(10), 1535;) is selected as "Feature Paper--high-quality paper and greatly recommended by our editor". <http://www.mdpi.com/1996-1073/10/10/1535>

2018 The paper "A novel solar trigeneration system integrating PVT (photovoltaic / thermal collectors) and SW (seawater) desalination: Dynamic simulation and economic assessment (2014)" published in Energy, was ranked top 1%, among the most cited works of the Energy Journal in recent years

2019 He is included in the list of 77 researchers of the University Federico II in the ranking of the 100000 most influential international scientists belonging to different disciplines, published by the journal Plos Biology.

<https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3000384>

2020 "Loyalty Award" for the SDEWES 2020 congress, Dubrovnik, <https://www.sdewes.org/awards.php>

2021 He is ranked 15th in the list of 108 researchers of the University Federico II in the ranking of the 100000 most influential international scientists belonging to different disciplines, which collects about 2% of the best world researchers, published by the Journal Plos Biology.

<http://www.unina.it/-/24789938-168-docenti-tra-i-migliori-ricercatori-al-mondo>

MAIN RESEARCH TOPICS

- Fuel Cells
- Simulation models of hybrid SOFC-GT power plants
- Design and part-load analysis of hybrid fuel cell systems
- Thermo-economic optimization
- Iterative Local Global optimization
- Microtubular SOFC
- Energy saving in buildings
- Solar Energy
- Solar Heating and Cooling

- Polygeneration
- Concentrating Photovoltaic Thermal Collectors
- Desalination
- Hybrid solar geothermal power plants
- Organic Rankine Cycles
- Dynamic Simulation of Solar systems
- Dynamic Simulation of buildings
- Near zero energy buildings
- Hydrogen storage
- Power to gas
- Biomethane
- Electrical storage
- District heating and cooling
- Energy Planning
- Thermal storage

MAIN RESEARCH CONTRACTS

2005-Present He is involved in several research contracts between the University of Naples Federico II and some Companies and/or public institutions (GESEN, DIAM Seconda Università degli Studi di Napoli, Circumvesuviana S.r.l., Aeronautica Militare Italiana, ANEA – Agenzia Napoletana Energia e Ambiente, A&I D.M. s.p.a., AOU Federico II Secondo Policlinico di Napoli, Ospedale Regionale “Miulli”, AVIO, CETENA s.p.a.)

2014-Present He is main advisor for 6 Research contracts between the University of Naples Federico II and some Companies (AVProject s.r.l., Consorzio UCG, SAMSO SpA, MBDA, Energytop, Miulli, Flavio Riccelli)

2005-Present He is involved in several research projects (PRIN 2005, PRIN 2007, PON01_02864 , PON03PE_00093_1, Campus RISE, ENEA; BIOFFEDSTOCK, ASSET, METROPOLIS) funded by different institutions (Italian Ministry of Education, European Union, Italian Ministry of Environment, Campania Region)

2016-Present He is main advisor for the project line “trigeneration by geothermal energy” of the project “GeoGrid” PON03PE_00171_1 (5.104.827 €, budget UNINA: 236.692 €) Ricerca e Competitività 2007-2013

2022-Present He is main national advisor for the project (PRIN 2020), “Optimal refurbishment design and management of small energy micro-grids”, total cost 881585 €, budget UNINA 208963€

ACADEMIC MANAGEMENT

2008–Present He is a member of the Doctorate Advisory Committee at the University of Naples Federico II, University of Naples Parthenope and University of Palermo

2009-Present He is a member of several Committees for Doctorate exams in Italy and other Countries, he is also member of Committees for research fellowships and researchers

MAIN INTERNATIONAL COLLABORATIONS

Prof. M.R. von Spakovsky, Eng. A. Arsalis, Virginia Tech, USA.

Prof. N.Sammes, Colorado School of Mines (USA),

Prof. Marku Lampinen, Aalto University (Finland)

Prof. S.A. Kalogirou, University of Cyprus

Prof. Neven Duic, University of Zagreb

PBA International Prague, s.r.o.

Dr Ighball Askari (University of Kerman)

Prof. Alicia Valero, University of Zaragoza,

Prof. Ursula Eicker, University of Stuttgart

Prof. Ali Kacebas (University of Mugla, Turkey)

Prof. Svetlana Djambova, University of Architecture, Civil Engineering and Geodesy (UACEG)

Dr. Fontina Petrakopoulou-Robinson, Universidad Carlos III de Madrid

Prof. Mariusz Filipowicz, University of Krakow

Dr. Tulio Matencio, Universidade Federal de Minas Gerais / Departamento de Química

Prof. Ponce de Leon, University of Southampton (borohydride fuel cells)

Dr. Mazzoni and Romagnoli, University of Singapore (district heating and cooling)

BIBLIOMETRIC INDEXES

According to the Scopus database (April 2022), he is author of 147 papers, receiving 5313 citations, H-index is 45.

According to the GoogleScholar database (April 2022), he is author of 174 papers, receiving 6693 citations, H-index is 48.

ADDITIONAL INFORMATION

Publications

[1] F. Calise, F. L. Cappiello, M. Dentice d'Accadia, F. Petrakopoulou, and M. Vicidomini, A solar-driven 5th generation district heating and cooling network with ground-source heat pumps: a thermo-

economic analysis. Sustainable Cities and Society, 22106707 (ISSN), 2022.Vol.: 76,DOI: 10.1016/j.scs.2021.103438.

[2] F. Calise, N. Duic, A. Pfeifer, M. Vicidomini, and A. M. Orlando, Moving the system boundaries in decarbonization of large islands. Energy Conversion and Management, 01968904 (ISSN), 2021.Vol.: 234,DOI: 10.1016/j.enconman.2021.113956.

[3] F. Calise, F. L. Cappiello, M. Dentice d'Accadia, and M. Vicidomini, Thermo-economic optimization of a novel hybrid renewable trigeneration plant. Renewable Energy, 09601481 (ISSN), 2021.Vol.: 175: pag. 532-549,DOI: 10.1016/j.renene.2021.04.069.

[4] F. Calise, F. L. Cappiello, L. Cimmino, M. Dentice d'Accadia, and M. Vicidomini, Dynamic simulation and thermoeconomic analysis of a hybrid renewable system based on PV and fuel cell coupled with hydrogen storage. Energies, 19961073 (ISSN), 2021.Vol.: 14(22),DOI: 10.3390/en14227657.

[5] F. Calise, F. L. Cappiello, M. Vicidomini, and F. Petrakopoulou-Robinson, Water-energy nexus: A thermoeconomic analysis of polygeneration systems for small Mediterranean islands. Energy Conversion and Management, 01968904 (ISSN), 2020.Vol.: 220,DOI: 10.1016/j.enconman.2020.113043.

[6] F. Calise, F. L. Cappiello, M. Dentice d'Accadia, and M. Vicidomini, Energy efficiency in small districts: Dynamic simulation and technoeconomic analysis. Energy Conversion and Management, 01968904 (ISSN), 2020.Vol.: 220,DOI: 10.1016/j.enconman.2020.113022.

[7] F. Calise, F. L. Cappiello, M. Dentice d'Accadia, and M. Vicidomini, Dynamic simulation, energy and economic comparison between BIPV and BIPVT collectors coupled with micro-wind turbines. Energy, 03605442 (ISSN), 2020.Vol.: 191,DOI: 10.1016/j.energy.2019.116439.

[8] F. Calise, M. Dentice d'Accadia, R. Vanoli, and M. Vicidomini, Transient analysis of solar polygeneration systems including seawater desalination: A comparison between linear Fresnel and evacuated solar collectors. Energy, 03605442 (ISSN), 2019.Vol.: 172: pag. 647-660,DOI: 10.1016/j.energy.2019.02.001.

[9] F. Calise, F. L. Cappiello, A. Carteni, M. Dentice d'Accadia, and M. Vicidomini, A novel paradigm for a sustainable mobility based on electric vehicles, photovoltaic panels and electric energy storage systems: Case studies for Naples and Salerno (Italy). Renewable and Sustainable Energy Reviews, 13640321 (ISSN), 2019.Vol.: 111: pag. 97-114,DOI: 10.1016/j.rser.2019.05.022.

[10] F. Calise, M. D. D'Accadia, A. MacAluso, A. Piacentino, and L. Vanoli, Exergetic and exergoeconomic analysis of a novel hybrid solar-geothermal polygeneration system producing energy and water. Energy Conversion and Management, 01968904 (ISSN), 2016.Vol.: 115: pag. 200-220,DOI: 10.1016/j.enconman.2016.02.029.

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV

