

# Curriculum Vitae of Prof. Dr. ing. Damiana Chinese

## EDUCATION AND PROFESSIONAL EXPERIENCE

Damiana Chinese is Associate Professor in Industrial Systems Engineering at the University of Udine at the Polytechnic Department of Engineering and Architecture, having obtained her lecture qualification in January 2013. Previously (2005-2018) she had been an Assistant Professor in Industrial Systems Engineering (Italian Scientific Sector ING-IND/17) at the University of Udine, with tenure since September 2008.

She has been a post-doc fellow at the University of Udine – Department of Energy Technology until 2005.

During her Ph.D studies in Energy Technologies she has been a visiting researcher at the IER – Institute of Energy Economics and the Rational Use of Energy at the University of Stuttgart (Germany) and at the Department of Economics at the USI (Università della Svizzera Italiana) in Lugano.

She has obtained her Ph.D. in Energy technologies in March 2004, discussing her dissertation on “Advanced energy networks in a liberalised market: methods and models for industrial districts”. Her background is in Management Engineering, having graduated *summa cum laude* at the University of Udine in the year 2000.

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## RESEARCH INTERESTS AND AREAS OF EXPERTISE

The research focus of prof. Chinese is on the mutual relationships between energy systems, industrial systems, logistics and transportation, particularly concerning their impact on sustainability, energy consumption, carbon footprint and, more recently, water footprint. In particular, her areas of expertise include:

1. Analysis and optimization of the **energy and environmental performance of industrial systems**. Her current focus is on the assessment and optimization of the nexus between water and energy consumption, as well as of carbon emissions, in **the transition to renewable energy or to efficient energy use in industrial processes**.
2. **Urban and municipal energy systems**, with a special focus on the design and optimization of **district energy (heating and cooling systems)**, on GIS based models, and on **waste heat recovery and industrial symbiosis projects**.
3. Design of **sustainable logistics networks** and transport systems, with a special focus on **planning of refuelling/recharging systems for alternative fuels (biomethane, hydrogen) and powertrains** (electric vehicles), on raw materials supply to **bioenergy conversion plants** and on the **evaluation of the energy and environmental impact of manufacturing logistics and freight transport**.
4. **Maintenance management**, involving surveys on practices and maturity and industrial research contracts on reliability modelling for the optimization of maintenance policies. She is currently interested in modelling the links between maintenance and environmental impact performance, including product and facilities lifetime extension opportunities.

From a methodological viewpoint, she has experience in **energy and logistics systems modelling and optimization, as well as in the use of GIS tools** when tackling local energy planning and location modelling issues. She is also experienced in **multi-criteria methods, Monte Carlo simulation (also for reliability modelling) and multivariate statistical analysis for exploratory research and for energy demand prediction**. She has authored more than 50 scientific publications, thereof 28 indexed in Scopus and 16 published in ISI Web of Science Journals. According to Scopus, her current H-index is 15 and her work has been cited in 535 documents.

RESPONSIBILITIES  
IN SCIENTIFIC  
COMMUNITIES  
AND NETWORKS

Dr. Chinese has been a referee for *Waste Management, Proceedings of the Institution of Mechanical Engineers Part A Energy and Power, International Journal of Energy Research, Energy, Applied Energy, Biomass and Bioenergy, Energy and Buildings, Energy Policy, Journal of Cleaner Production, Clean Technologies and Environmental Policy, Journal of Quality in Maintenance Engineering, International Journal of Simulation Modelling.*

She has been a member of the scientific committee of the *Dubrovnik Conference on Sustainable Development of Energy, Water and Environment Systems* (2009 and 2021) and of the *SEEP Sustainable Energy and Environmental Protection* conference in 2021. She has also been an independent evaluator of research funding applications on behalf of *Fondecyt Fondo Nacional de Desarrollo Científico y Tecnológico of Chile* and of the *Austrian Climate Research Programme.*

She belongs to the Italian Association of Professors in Industrial Systems Engineering (AIDI) since its foundation in 2012.

Since 2012 she belongs to TESEM, the **National Monitoring Centre on Technologies and Services for Maintenance** of Politecnico di Milano.

Since 2016 she belongs to the Editorial Board of *Manutenzione Tecnica e Management* (Maintenance Technique and Management), Thomas Industrial Media, official media of A.I.MAN., the Italian Association of Maintenance.

Since 2017 she belongs to **ALEP-I, the Italian National Research Network on Advanced Local Energy Planning**, founded by the Politecnico of Torino with the support of ENEA, the Italian National Agency for New Technologies, Energy and Sustainable Economic Development.

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INTERNATIONAL  
COOPERATION  
AND RESEARCH  
GROUPS

Over the years, she has been supervising Ph.D. students and coordinating the research activities of small groups. She established direct cooperations with research institutions in Austria (**International Institute for Applied Systems Analysis, IIASA, Laxenburg and iSpace Research Studios Austria, Salzburg**) and Scotland (**Department of Design, Manufacture and Engineering Management, University of Strathclyde, Glasgow**) in the fields of energy and biofuels supply chains, energy systems planning, and sustainable logistics.

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RESPONSIBILITY  
AND  
PARTICIPATION IN  
SCIENTIFIC  
PROJECTS

**COORDINATION OF FUNDED RESEARCH PROJECTS**

From January 2017 to July 2019 she has been coordinator of the project **IDEE – Crossborder Research Network for the Integrated Design of Efficient Energy systems in urban areas**, funded at European Level in the Frame of the Cooperation program **Interreg Italy Austria.**

**PARTICIPATION TO FUNDED RESEARCH PROJECTS**

2020-2021 “Development of technologies and facilities design for improving the energy efficiency of low temperature and high temperature industrial processes”, research unit coordinator and co-beneficiary of **ENEA -Italian national agency for new technologies energy and sustainable economic development within the Italian Electric System Research program 2019-2021**

2014-2015 "TRIM – technologies and industrial research for marine mobility ", funded at Italian Level from MIUR in the Frame of the **Cluster "Trasporti Italia 2020"**.

2010-2012 "NG SHIP, Natural Gas for Ship Propulsion", co-funded at European level within **POR-FESR 2007-2013** by Regione Friuli Venezia Giulia.

2003-2004, "Systemic study on the introduction of ORC as heat recovery strategy in industrial areas" funded at regional level by **Regione F.V.G. (Legge 3)**.

2001-3 **PRIN** "Facility Management in Regime di Global Service in un distretto industriale".

#### **SCIENTIFIC COORDINATION OF RESEARCH PROJECTS FUNDED BY INDUSTRIES**

2017 "DIGIMET – DIGITALIZATION FOR THE METAL INDUSTRY" – Support to method and tool development for condition based monitoring and maintenance planning in steelmaking plants. **Danieli Automation**, Buttrio(UD).

2016-2017 "Engineering configuration of heat-recovery plants based on absorption cooling in greenfield steelmaking plants ", Centro Ricerche Danieli, Buttrio(UD).

2013-2015 "**BREF** – Business Resource Efficiency in micro and small firms in the Italy-Austria crossborder area", funded at European level in the frame of the **cooperation program Interreg Italy Austria 2007-2013**. Scientific consultant of **Confartigianato Udine** on research design, validation and analysis of energy efficiency, sustainable logistics, ecodesign and lean manufacturing programs in MPI.

2014, "Maintenance cost management and optimization within the Industry 4.0 Framework", **FREUD SpA, BOSCH Group**, Fagagna(UD).

2008, "Reliability analysis and modelling of machinery subsystems having an impact on safety", **Casagrande S.p.A**, Fontanafredda (PN).

#### **SCIENTIFIC RESPONSIBILITY FOR TECHNOLOGY TRANSFER PROJECTS**

2007 "DESIGN OF ENERGY SUPPLY AND DISTRIBUTION SYSTEM FOR A NEW INDUSTRIAL BUILDING", **Anodica Trevigiana SpA**, Codogné (TV).

2007 "ENERGY DIAGNOSIS OF PRODUCTION PLANTS", funded by IAL FVG in support of **ArcelorMittal Distribution Solutions** e di **NSguassero S.p.A**, San Giorgio di Nogaro (UD).

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#### **TEACHING AND ACADEMIC DUTIES**

**Since 2004/2005** she has been lecturing Industrial Systems Engineering to undergraduate and graduate students in Mechanical Engineering at the University of Udine.

At the University of Udine, she has supervised some 60 Master theses in Mechanical Engineering and in Management Engineering, she belongs to the PhD Board in Environmental and Energy Engineering Science and has been supervisor for two Doctoral theses.

She has been a member of the Ph.D. thesis committee on New technologies and ICT for territories and the environment at the IUAV University of Architecture and Design in Venice in 2018, and external examiner for a Ph.D. thesis at the School of Chemical and Process Engineering of the University of Leeds in 2019 and for a Ph.D thesis at the Luleå University of Technology, Department of Engineering Sciences and Mathematics, division of Energy Science, in 2021.

Between 2007 and 2011 she participated to the Commission for Communication of the Engineering Faculty of Udine. Since 2013 she belongs to the Commission for Quality Assurance of the Mechanical Engineering Course at the University of Udine.