

PERSONAL INFORMATION

MASSIMILIANO ERRICO

PROFESSOR

**DEPARTMENT OF MECHANICAL, CHEMICAL AND MATERIALS
ENGINEERING (DIMCM)**

Università di Cagliari (UNICA)

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Result-driven Professor with expertise in Chemical Engineering and 20 years of teaching experience. Possesses a strong track record in supervision of PhD, bachelor and master projects. Has experience in attracting external funds, coordinating projects and performing administrative functions.

EDUCATION AND QUALIFICATIONS

- Title of qualification awarded Italian national qualification as Full Professor in the higher education system.
 - Date, Place Rome, 04 February 2022
- Title of qualification awarded Expert in the field of “Chemical Engineering Process Design”
 - Date, Place 21 September 2010, Università degli Studi di Cagliari
- Title of qualification awarded Doctor Europaeus in Industrial Engineering (thesis’s title: “Optimal Retrofit and Process Design of Distillation Plants for Energy Saving and Process Intensification”)
 - Date, Place 26 February 2008, Università degli Studi di Cagliari
- Title of qualification awarded Master degree magna cum laude in Chemical Engineering (thesis’s title: “Energy saving by preflash implementation in a crude distillation unit”)
 - Date, Place 14 December 2004, Università degli Studi di Cagliari
- Title of qualification awarded Bachelor degree magna cum laude in Chemical Engineering (thesis’s title: “Pitting corrosion in the flash separator of the Sarlux IGCC plant”)
 - Date, Place 15 April 2002, Università degli Studi di Cagliari

ACADEMIC EXPERIENCE

- Dates December 2025-Present
 - Name of employer Università di Cagliari, Department of Mechanical, Chemical and Materials Engineering
 - Position held Professor
- Dates December 2024-December 2025
 - Name of employer University of Southern Denmark (SDU), Department of GreenTechnology (IGT)
 - Position held Full Professor
- Dates July 2015-December 2024
 - Name of employer University of Southern Denmark, Department of Chemical Engineering, Biotechnology and Environmental Technology
 - Position held Associate Professor
- Dates October 2012-June 2015
 - Name of employer Università degli Studi di Cagliari, Dipartimento Ingegneria Meccanica, Chimica e dei Materiali, Italy
 - Position held Assistant Professor

- Dates January 2011-May 2012
 - Name of employer University of Southern Denmark, Department of Chemical Engineering, Biotechnology and Environmental Technology
 - Position held Post-doc
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- Dates April 2008-March 2010
 - Name of employer Università degli Studi di Cagliari, Italy
 - Position held Post-doc

TEACHING EXPERIENCE

February 2024 – December 2025	SDU, IGT, Professor of the course “Industrial Separation Technology” master level, 2nd semester
September 2022 - December 2025	SDU, IGT, Professor of the course “Sustainable Design through Process Integration”, bachelor level, 5th semester
September 2020 – December 2025	SDU, IGT, Professor of the course “Modelling and Optimization of Advanced Separation Processes”, master level, 1st semester
February 2020 – December 2025	SDU, IGT, Professor of the course “Calculus of Chemistry”, bachelor level, 4th semester
February 2018 – December 2024	SDU, IGT, Professor of the course “Risk Management in Chemical and Biochemical Engineering”, master level, 2nd semester
August 2017 – December 2025	SDU, IGT, Assistant Lecturer of the course “Introduction to Chemical Process Control”, summer course, bachelor/master level
September 2015 – December 2025	SDU, IGT, Professor of the course “Design of Ideal Chemical Reactors”, bachelor level 5th semester
September 2019 – January 2022	SDU, IGT, Professor of the course “Chemical Process Design”, bachelor level 5th semester
September 2016 – January 2018	SDU, KBM, Professor of the course “Process Simulation and Optimization”, elective course bachelor/master, fall semester
July 2015 – September 2017	SDU, KBM, Professor of the course “Thermodynamics”, bachelor level, 2nd semester
October 2012 - June 2015	Università degli Studi di Cagliari (UNICA), Dipartimento Ingegneria Meccanica, Chimica e dei Materiali (DIMCM), Italy, Professor of the course “Plant Design”, bachelor level, 5th semester
January 2011 - 2012	SDU, KBM, Teaching Assistance of the course “Thermodynamic”, bachelor level, 2nd semester
	SDU, KBM, Assistant Lecturer “Industrial Separation Technologies”, master level, 2nd semester
	SDU, KBM, Assistant Lecturer “Chemical Process Design”, bachelor level, 5th semester
Academic year 2010/2011	UNICA, Facoltà di Medicina e Chirurgia, Professor of the course: “Chemical Plant Design and Prevention Techniques in the Environment and Work Places”
	UNICA, DIMCM, Professor of the course: “Aspen Plus applied to Plant Design”
	UNICA, DIMCM, Teaching Assistant of the course: “General Chemistry”, bachelor level, 1st semester
November 2009 - June 2010	High School: Istituto Tecnico Industriale Statale Michele Giua, Cagliari, Italy, Supply-teacher for the courses: Chemistry Laboratory, Micro-biology Laboratory and Chemical Pollutants Laboratory (Laboratorio di Chimica, Laboratorio di Microbiologia, Laboratorio di Agenti)
Academic year 2009/2010	UNICA, DIMCM, Professor of the course: “Aspen Plus applied to Plant Design”
	Università degli Studi di Sassari, Facoltà di Agraria, Professor of the course “Unit

	Operations in Food Engineering”, bachelor level, 6th semester
	UNICA, DIMCM, Teaching Assistant of the course: “General Chemistry”, bachelor level, 1st semester
From 2005 to 2010	UNICA, DIMCM, Assistant Lecturer of the course: “Sustainable Chemical Plant Design”, master level, 2nd semester
	UNICA, DIMCM, Assistant Lecturer of the course: “Chemical Plant Design”, bachelor level, 5th semester
	UNICA, DIMCM, Assistant Lecturer of the course: “Unit Operations in Food Engineering” elective course
Academic years 2008/2009, 2007/2008, 2003-2005	UNICA, DIMCM, Teaching Assistant of the course: “General Chemistry”, bachelor level, 1st semester

VISITING RESEARCHER

• Dates	November 2021
• Place	Federal University of Paraná (UFPR), Brazil
• Main activities	Lectures on Process synthesis and optimization
• Dates	August 2021, September 2019
• Place	Bulgarian Academy of Science, Institute of Chemical Engineering
• Main activities	Lectures on Sustainable biofuel production
• Dates	May 2019
• Place	Instituto Superior de Engenharia de Lisboa (ISEL)
• Main activities	Lectures on Green extraction techniques
• Dates	10-18 January 2015
• Place	Universidad de Guanajuato, Campus Guanajuato, Departamento de Ingenieria Quimica Guanajuato (Mexico)
• Main activities	Lectures: “The evolution of distillation sequencing: from simple to complex configurations”
• Dates	March-September 2014
• Place	University of Southern Denmark, Department of Chemical Engineering, Biotechnology and Environmental Technology
• Main activities	Research on “Design and optimization of intensified distillation sequences”
• Dates	March-April 2012
• Place	Università degli Studi di Cagliari, Dipartimento di Ingegneria Chimica e Materiali
• Main activities	Research on “Alternative separation sequences for biofuels production”
• Dates	January-March 2008
• Place	Lappeenranta University of Technology, Faculty of Technology, Lappeenranta, Finland
• Main activities	Research on “New distillation sequences for energy and capital costs reduction”
• Dates	November 2006-March 2007
• Place	Lappeenranta University of Technology, Faculty of Technology, Lappeenranta, Finland
• Main activities	Research on “Retrofit and design of distillation sequences for energy reduction”

INDUSTRIAL EXPERIENCE

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| • Dates | June-July 2004 |
| • Name and address of employer | Raffineria Saras SpA, Sarroch (CA), S.S. 195 |
| • Sector | Refinery |
| • Main activities and responsibilities | Study of the energy performance of the crude distillation unit: collection and analysis of plant data, reconciliation and process modeling |
| • Dates | September-October 2001 |
| • Name and address of employer | Raffineria Saras SpA, Sarroch(CA), SS 195 |
| • Sector | Refinery |
| • Main activities and responsibilities | Analysis of pitting corrosion in IGCC plant: equipment inspection, analysis of the process and retrofit of the equipment |

ADMINISTRATIVE FUNCTIONS

- 2024 – present Member of the expert panel for Slovak Research and Development Agency (SRDA)
- 2022 – present External evaluator for the Cyprus Research and Innovation Foundation
- 2021 – present External evaluator for the European Commission
- 2019 – present Vice head of the Chemical Engineering Section at Department of Green Technology
- 2018 – present Assessor for the Irish Research Council (GOIPD)
- 2017 – December 2025 Master Programme Coordinator at Department of Green Technology (SDU)
- 2008 – 2013 Member of the Executive board of the Association of the Chemical Engineers graduated at the University of Cagliari (Associazione Ingegneri Chimici dell'Università di Cagliari)
- 2008 – 2013 Secretary-paymaster of the Association of the Chemical Engineers graduated at the University of Cagliari (Associazione Ingegneri Chimici dell'Università di Cagliari)
- 2005 – 2008 Representative of the students of the Industrial Engineering Doctoral School
- 2005 – 2008 Representative for the Chemical Engineering students in the Industrial Engineering Doctoral School Council

SUPERVISION OF POST-DOCS

Supervision of a Post-doc related to WP2 (Extraction and purification of anthocyanins) of the project Probiofa, February 2019-January 2020.

CO-SUPERVISION AND SUPERVISION OF PHD PROJECTS

- SUSTEPS: Sustainable, secure, and competitive energy through scaling up advanced biofuel generation. PhD related to: Aqueous phase recycling and valorization, started November 2024
- Modeling and Optimization of Biomass Valorization and Food Manufacturing, project co-supervised with UNICA to be terminated in November 2025
- Extraction, Structural Determination and Bioactivity Assessment of Fucoidan from Brown Algae, project running at SDU terminated November 2020
- Energy-efficient Conversion of Castor Oil for Biodiesel Production, project running at SDU terminated in October 2018

- Modeling and Analysis of the CO₂ Post-Combustion Capture Process with MEA, project co-supervised with UNICA terminated in December 2017
- Synthesis, Modeling and Evaluation of pretreatment Technologies for Biofuels Production Systems, project running at SDU terminated in October 2017

SUPERVISION OF BACHELOR AND MASTER PROJECTS

- 2017 – December 2025 supervisor at IGT of nine In-Company period, 2 in Aquaporin A/S, 1 in Koppers, 2 in Novo Nordisk, 1 in QNTM Labs, 1 in Kiilto Clean A/S, 1 in Nature Energy, 1 in Trinity Synergies.
- 2015 – December 2025 supervision at IGT of more than 20 between bachelor and master projects in collaboration with Danish companies, international Universities or in process modeling.
- 2004-2014 University of Cagliari, 8 bachelor projects and 12 master projects. Most of the master projects were performed in collaboration with local industries including refineries, dairy industries and bulk chemicals production facilities.

FUNDED GRANTS

- EUopSTART, Natural cheese production through new chemometric tools, application: 4278-00070B, funding body: Styrelsen for Forskning og Innovation, grant amount 100,000 DKK
- EUopSTART, Sustainable biofuel generation via thermo-bio-chemical pathways and CO₂ utilization, application: 2074-00096B, funding body: Styrelsen for Forskning og Innovation, grant amount 50,000 DKK
- Otto Mønstedts Fund, 225,000 DKK (2024)
- Otto Mønstedts Fund, 225,000 DKK (2022)
- International Network Programme “Biofuels-Biocompounds Denmark-Brazil synergy” Funded by the Ministry of Higher Education and Science Denmark, Grant amount 287,836 DKK
- Project coordinator of the Interreg North Sea Region “Zero Emission Ports North Sea” (ZEM Ports NS) Grant amount 2,135,861.00 €
- Main Coordinator of the H2020-MSCA-RISE-2017 project 778168 “Integrated Process and Product Design for Sustainable Biorefineries” Grant amount 594,000.000 €
- More than 15 grants Erasmus + Programme, Mobility for Learners and Staff, average amount per grant 8,000 DKK
- EUopSTART, IProPBio, application 7061-00003B, funding body: Styrelsen for Forskning og Innovation, grant amount 48,960 DKK
- Competence Foundation Fund, 2016, grant amount 2,250 €

EDUCATIONAL COURSES

- Boost Workplace Well-being through Effective Communication, Odense 2025
- New to Research Leadership, Odense 2022
- Leadership Aspirant Programme, Odense 2022
- Project Management, Odense 13-24 August 2018
- Straight to the point: Perfect Punctuation, Odense 9 March 2018
- Aspen Plus: Physical Properties for Process Engineers, Frankfurt August 25-26, 2016
- Building Custom Simulation Models using Aspen Custom Modeler, Frankfurt March 14-16, 2016
- Advances Separation Technologies in Chemical Engineering, Berlin August 20-31, 2007

- Wastewater Treatment Plants, Cagliari (Italy) May 23-29, 2006
- Life Cycle Analysis, Cagliari (Italy) January 18, 2006
- Process Control of Chemical Processes, Chia (Cagliari, Italy) June 19-26, 2005
- Numerical Methods for Chemical Engineering (Metodi Matematici per l'Ingegneria Chimica), Bologna April 4-8, 2005

ATTENDANCE AT CHEMICAL ENGINEERING CONFERENCES

- Invited speaker for the Security Enhancement for Climate Changes Impacting Urban Resources workshop supported by the NATO Science for Peace and Security Programme 2024, 9-12 July Montelibretti (Rome)
- Symposium on Dynamics and Control of Process Systems, including Biosystems, Dycops 2022, 14-17 June Busan Republic of Korea
- International Conference on Biomass, IconBM 2022, 5-8 June Naples, Italy
- European Symposium on Computer Aided Process Engineering, ESCAPE-27, 2017, Barcelona
- 13th International Conference on Chemical & Process Engineering, ICheaP-13, 2017, Milan
- European Symposium on Computer Aided Process Engineering, ESCAPE-26, 2016, Portoroz (Slovenia)
- European Symposium on Computer Aided Process Engineering, ESCAPE-25, 2015, Copenhagen
- European Symposium on Computer Aided Process Engineering, ESCAPE-24, 2014, Budapest
- 11th International Conference on Chemical & Process Engineering, ICheaP-11, 2013, Milan
- European Symposium on Computer Aided Process Engineering, ESCAPE-22, 2012, London
- 11th International Chemical and Biological Engineering Conference, CHEMPOR 2011, Lisbon
- Chemical Engineering: new trends, Congress GR.I.CU., 2008, Le Castella (Crotone), Italy
- European Congress of Chemical Engineering 6, 2007, Copenhagen
- Electrochemistry for the environmental saving (Elettrochimica per il Recupero dell'Ambiente), 2007, Cagliari, Italy
- 34th International Conference of Slovak Society of Chemical Engineering, 2007, Tatranské Matliare, Slovak Republic
- Distillation and Absorption 8, 2006, London
- 17th International Congress of Chemical and Process Engineering, 2006, Prague
- X Congreso Mediterráneo de Ingeniería Química, 2005, Barcelona

PRIZES

TEK-Teaching prize 2021 (best teacher award for the Faculty of Engineering)

Innovation Day 2011 - Energy Efficiency and Renewable Energy Case Study from Fjernvarme Fyn, 6 May 2011

REVIEW ACTIVITY FOR INTERNATIONAL JOURNALS AND CONFERENCES

Journals: AIChE Journal, Antioxidants, Applied Energy, Applied Thermal Engineering, Biofuels Bioproducts and Biorefining, Chemical Engineering and Processing: Process Intensification, Chemical Engineering Research and Design, Chemical Engineering Science, Chemical Engineering and Technology, Clean Technologies and Environmental Policy, Computers and Chemical Engineering, Desalination, Energy, Energy Technology, Fuel, Industrial & Engineering Chemistry Research, International Journal of Greenhouse Gas Control, Journal of Chemical Technology and Biotechnology, Journal of Food Engineering, Journal of Taiwan Institute of Chemical Engineers, Korean Journal of Chemical Engineering, Processes, Separation and Purification Technology.

Conferences: International Conference on Heat Exchangers Fouling and Cleaning-2009, 11th International Conference on Chemical & Process Engineering ICheaP-11, 12th International Conference on Chemical & Process Engineering ICheaP-12, 13th International Conference on Chemical & Process Engineering ICheaP-13, 16th International Conference on Chemical & Process Engineering ICheaP-16, European Symposium on Computer Aided Process Engineering ESCAPE-27, International Conference on Biomass 2022.

RESEARCH ACTIVITY

My research activity is aligned with the development of resource-efficient and competitive technologies according to the Green Transition principles set by the European Commission. In particular, part of the research is done experimentally by testing methods to extract, characterize, and purify high-added-value compounds from biowastes or edible plants. Brewer's spent grain, coffee grounds, aronia pomace are some examples of the substrates used. Another part of the research includes the modeling and optimization of the separation methods necessary to bring the target compounds to the purity level required by the market. This includes the development of synthesis methodologies to generate all the possible alternatives to be tested in order to find the optimal one. The methods developed were successfully applied to the separation of bio-alcohols and biodiesel produced from renewable sources. Design and optimization procedures were also developed for carbon dioxide capture through reactive absorption in amine solutions proving their importance in advancing this technology to an industrial level.

Other research activities include the energy optimization of heat exchanger networks, and the defluoridation of water by adsorption on natural soils. The latter was tested in an Ethiopian rural community to develop a sustainable and cheap way to provide fresh water in developing countries.

PUBLICATION INDEXES

My publication history starts in 2006. My H index, based on the highest number of papers with at least the same number of citations, is equal to 30 with over 2400 citations (source: Scopus, January 2026).