# Prof. Canu Paolo Short Curriculum Vitae

## Career

2006 Full Professor (Applied Physical Chemistry) at Department of Industrial Engineering, University of Padua

1998-2006, Associate Professor (Applied Physical Chemistry) Department of Chemical Engineering Principles and Practice, University of Padua

1994-1998, Lecturer (Chemical Plants) Institute of Chemical Plants University of Padua, Italy

1992-1994, Process Engineer ACTEA (Radici Group) Environmental Engineering R&D

1992 - PhD in Applied Molecular Chemistry (Scuola Normale Superiore di Pisa)

1988 – Chem Eng MSc, Politecnico di Milano

# Tutoring

PhD Students Advisor or co-advisor (>15 students), University of Padua, Italy MS Students Advisor (>220 students), University of Padua, Italy Undergaduate Students Advisor (>10 students), University of Padua, Italy

## Teaching

Chemical Reaction Engineering, 12 ECTS, MSc. Chemical & Process Engineering, Univ. of Padua Combustion, 6 ECTS MSc. Energy Engineering, Univ. of Padua Reactive Fluid Mechanics, 3 ECTS. Industrial Engineering PhD School

#### **Research interests**

Research activity developed at Politecnico di Milano, Univ. of Wisconsin (Madison), and mostly at the University of Padua. Research interests are multidisciplinary, centered on the fundamentals of multiphase flow, mostly gas-solids, and reactors, where the solids are reactants, products or catalysts. Methods combine custom experimental techniques and multiscale modelling, from molecular models to fluid mechanics of multiphase flow.

Applications span from fine chemistry to large scale, oil&gas processes, mostly related to CH4 and H2 chemistry. Combustion and emissions control, as well as renewable energy (biomass) are main areas of research.

A full list of publications is available at the University Repository (www.research.unipd.it/>public archive). Full text is also available for several publications, in the same archive.

# Institutional commitments

2006-2010 Chair of the Chemical Eng School (Bachelor and Master courses)

Member of several commissions: Industrial Eng. PhD School, Industrial Area Scientific Research, Dept. Resources and Development, Students orientation and advisory, Local coordinator of Erasmus agreements: Institute National Polytechnique de Toulouse (F), Royal Institute of Technology, Stockholm, (S), Åbo Akademi, Turku, (F), Umeå University, Umeå (S), Heriot-Watt University, Edimburgh (UK) Technical University of Eindhoven (NL).

Member of selection committees at Dept and University level, including foreign Universities, for PhD Defense, Research fellowships, temporary and permanent staff, both technical and teaching/research.

#### Journals

Associated editor: Waste Management

Reviewer: Applied Catalysis (A & B), Acta Mechanica, Catalysis Today, Chemical Eng Journal, Chemical Eng Science, Chemical Eng and Proc., Powder Technol, Ceramics Internl, Chemical Eng Research and Design, Chemical Eng Science: Fluidized Bed Applications, Catalysis Science and Technology, Drug Dev and Industrial Pharmacy, Energy, Energy and Fuels, Fuel, Environ. Dev and Sustainability, Environ. Science & Technology, Industrial & Eng Chemistry Research, International J of Chemical Reactor Eng, International J Pharmaceutics, J of Analytical and Applied Pyrolysis, Journal of Agricultural and Food Chemistry, J Chemical & Eng Data, J Supercritical Fluids, Waste Management.

## International collaborations

Prof. J-P Mikkola, Department of Chemistry Technical Chemistry, Umeå University (S), Green Chemistry, Biomasses, Ionic liquids

Prof. M. Sint-Annaland, F. Gallucci TU/e, Eindhoven-(NL), Reacting solids for chemical looping combustion Prof. T. Salmi, D. Murzin , AboAkademi, Turku (F), Gas-Liqui-Solid reactors, Green Chemistry Prof. N. Papayannakos, NTU Athens (GR), Catalysts and reactors for automotive applications Prof. J-P Paul, Université Lille (F), DFT kinetics of oxides catalysts from atomistic models Prof. Eric Climent, Laboratoire de Génie Chimique, Toulouse (F), Transport and adhesion in colloidal suspensions

Prof. L. Pettersen, K. Engval, R. Lanza, KTH, Stockholm-(S), Catalysis in methane partial oxidations and automotive applications

## **Research evaluation**

National evaluation criteria: personal scores compared to the average of the reference scientific community (SSD), at the same professorship degree (data of 2020) Number of papers = 2.7 times Number of citations = 2.6 times H index = 1.5 times

# **Technology transfer**

Prof. Canu has been involved in a large number of industrial research projects, supported by national and international companies, from 1994, at the University of Padua.

2018-Cofounder and CEO of a spin-off company, K-INN Tech, of the University of Padua, offering custom testing, modelling and design in multiphase processes, often including reactions.