



POLITECNICO
MILANO 1863

Curriculum vitae Prof. Fabio Inzoli



Fabio Inzoli

Full Professor
Department of Energy
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University Education

1988 Master in Mechanical Engineering, Politecnico di Milano, Milano, Italy
1991 PhD in Energy Engineering, Politecnico di Milano, Milano, Italy

Professional Activities

1984-1988 Research assistant in Energy Engineering Department, Politecnico di Milano.
1991-1992 Research fellows at University of Study, Milano, Italy
1994-1996 Research fellows at Scientific Institute H. San Raffaele, Milano. Italy.

Academic record

1996-1997 Assistant Professor of Thermodynamics, Politecnico di Milano, Milano, Italy.
1997-2010 Associate Professor, Politecnico di Milano, Milano, Italy.
2010- Full Professor, Politecnico di Milano, Milano, Italy.

Academic Governance

Head of Department of Energy of Politecnico di Milano (2013-2019)
Member of Academic Senate of Politecnico di Milano since (2013-2019)
Member of Board of Governors of Politecnico di Milano (2011-2012)
Member of Board of Department of Energy at Politecnico di Milano since 2008
Member of Academic Senate of Politecnico di Milano (2006-2010)
Member of Study Programme Board of Environmental and Geomatic Engineering Course of Study (2002-2012)

Institutional Roles

- Member of Project Management Group of Partnership Agreement between ENEL spa and Politecnico di Milano since 2016, for promoting research cooperation related to the global energy challenges involving resource assessment, processes and technological development, breakthrough innovation, energy system analyses and scenarios including economics, environmental and social impact of energy systems.
- Member of board of Lombardy Energy Cleantech Cluster (Le2C) (2013-2020)
- Member of Project Management Group of Partnership Agreement between Goppion spa and Politecnico di Milano (2016-208), for promoting research cooperation in the field of museum industry.
- Member of Project Management Group of Partnership Agreement between ITER International Fusion Energy Organisation and Politecnico di Milano (2014-2016), for promoting research cooperation related to Fusion Technology, cryogenic, electrical and nuclear engineering.

- Member of Project Management Group of Partnership Agreement between Solvay Specialty Polymers Italia spa and Politecnico di Milano (2013-2015) for promoting research cooperation in the field of new materials for production, conversion and storage of energy.
- Member of Project Management Group of Partnership Agreement between Maire Technimont spa and Politecnico di Milano (2013-2015)
- Member of Project Management Group of Partnership Agreement between Ansaldo Energia and Politecnico di Milano, (2013-2018)

Research interest

Prof. Fabio Inzoli is Full Professor in Thermodynamics, Heat transfer and Applied CFD at the Department of Energy in Politecnico di Milano.

His current areas of interest is related to heat transfer and multiphase flows modelling, power plant flue gas cleaning and oil and gas processes.

He is author of more than 200 scientific papers published on international journal or presented in national and international conferences. He started setting up in 2001 a research group on CFD which is currently focused on the development and implementation of turbulence and multi-phase models applied to the design of complex and innovative power plant devices.

In January 2013 he becomes Head of Department of Energy, in Politecnico di Milano, a research infrastructure that joins together different skills existing at Politecnico di Milano in various fields of engineering to provide, through interdisciplinary approach, convenient solutions to the complex problems that currently affect the energy sector. Today more than 330 people work in the 5 Research Division within 18 research units. The experimental laboratories are more than 10.000 m² dedicated to research, education, services to the industry.

Technology transfer

Team leader of research activities in energy field supported by companies as Nooter Eriksen, STF, eni, Redecam group, ENEL, Tenova.

Educational activity

Currently Prof. Fabio Inzoli teaches courses at the School of Industrial and Information Engineering of Politecnico di Milano. In particular, “Applied Thermodynamics and Heat Transfer” for students of Bachelor degree in Aeronautic Engineering and “CFD for Energy Engineering” for Energy Engineering Master of Study.

In his career, he had several educational courses in the energetic field under agreements with industrial partners. Since 2018 he is Director of Master of Study supported by ENEL in Strategic and Innovative O&M Management. He is and has been tutor of PhD programs for both numerical and experimental research issues about multiphase flow modeling applied to oil & gas industry.

Bibliography

Prof. Fabio Inzoli is author of more than 200 publications in the field of energy conversion and Computational Fluid Dynamics.

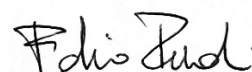
Scopus database (04/2020): documents 114, Citations 1800, H_index 23

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Autorizzo il trattamento dei miei dati personali ai sensi del D.Lgs. 196/2003

Dichiaro che quanto riportato nel presente curriculum corrisponde a verità, ai sensi del D.P.R.445/2000”;

Milan, 29th August 2019



Publications (2017-2020):

1. G.R. Guédon, J.D. Hyman, F. Inzoli, M. Riva, A. Guadagnini, A. **“INFLUENCE OF CAPILLARY END EFFECTS ON STEADY-STATE RELATIVE PERMEABILITY ESTIMATES FROM DIRECT PORE-SCALE SIMULATIONS”**, *Physics of Fluids*, 29 (12), 2017
2. G. Besagni, F. Inzoli, **“NOVEL GAS HOLDUP AND REGIME TRANSITION CORRELATION FOR TWO-PHASE BUBBLE COLUMNS”**, *Journal of Physics: Conference Series*, 923 (1), 2017
3. G. Besagni, F. Inzoli, T. Ziegenhein, H. Hessenkemper, D. Lucas, **“BUBBLE ASPECT RATIO IN DENSE BUBBLY FLOWS: EXPERIMENTAL STUDIES IN LOW MORTON-NUMBER SYSTEMS”**, *Journal of Physics: Conference Series*, 923 (1), 2017
4. E. Ranaee, L. Moghadasi, F. Inzoli, M. Riva, A. Guadagnini, **“IDENTIFIABILITY OF PARAMETERS OF THREE-PHASE OIL RELATIVE PERMEABILITY MODELS UNDER SIMULTANEOUS WATER AND GAS (SWAG) INJECTION”**, *Journal of Petroleum Science and Engineering*, 159, pp. 942-951, 2017
5. G. Besagni, F. Inzoli, **“THE EFFECT OF LIQUID PHASE PROPERTIES ON BUBBLE COLUMN FLUID DYNAMICS: GAS HOLDUP, FLOW REGIME TRANSITION, BUBBLE SIZE DISTRIBUTIONS AND SHAPES, INTERFACIAL AREAS AND FOAMING PHENOMENA”**, *Chemical Engineering Science*, 170, pp. 270-296, 2017
6. G. Besagni, F. Inzoli, T. Ziegenhein, D. Lucas, **“COMPUTATIONAL FLUID-DYNAMIC MODELING OF THE PSEUDO-HOMOGENEOUS FLOW REGIME IN LARGE-SCALE BUBBLE COLUMNS”**, *Chemical Engineering Science*, 160, pp. 144-160, 2017
7. G. Besagni, F. Inzoli, G. De Guido, L.A. Pellegrini, **“GAS HOLDUP AND FLOW REGIME TRANSITION IN SPIDER-SPARGER BUBBLE COLUMN: EFFECT OF LIQUID PHASE PROPERTIES”**, *Journal of Physics: Conference Series*, 796 (1), 2017
8. G. Besagni, F. Inzoli, G. De Guido, L.A. Pellegrini, **“THE DUAL EFFECT OF VISCOSITY ON BUBBLE COLUMN HYDRODYNAMICS”**, *Chemical Engineering Science*, 158, pp. 509-538, 2017
9. G. Besagni, F. Inzoli, **“THE EFFECT OF ELECTROLYTE CONCENTRATION ON COUNTER-CURRENT GAS–LIQUID BUBBLE COLUMN FLUID DYNAMICS: GAS HOLDUP, FLOW REGIME TRANSITION AND BUBBLE SIZE DISTRIBUTIONS”**, *Chemical Engineering Research and Design*, 118, pp. 170-193, 2017
10. G. Besagni, F. Inzoli, **“COMPUTATIONAL FLUID-DYNAMICS MODELING OF SUPERSONIC EJECTORS: SCREENING OF TURBULENCE MODELING APPROACHES”**, *Applied Thermal Engineering*, 117, pp. 122-144, 2017
11. G. De Guido, A.M. Pellegrini, G. Besagni, F. Inzoli, **“ACID GAS REMOVAL FROM NATURAL GAS BY WATER WASHING”**, *Chemical Engineering Transactions*, 57, pp. 1129-1134, 2017
12. G. Besagni, R. Mereu, F. Inzoli, P. Chiesa, **“APPLICATION OF AN INTEGRATED LUMPED PARAMETER-CFD APPROACH TO EVALUATE THE EJECTOR-DRIVEN ANODE RECIRCULATION IN A PEM FUEL CELL SYSTEM”**, *Applied Thermal Engineering*, 121, pp. 628-651, 2017
13. G.R. Guedon, G. Besagni, F. Inzoli, **“PREDICTION OF GAS–LIQUID FLOW IN AN ANNULAR GAP BUBBLE COLUMN USING A BI-DISPERSED EULERIAN MODEL”**, *Chemical Engineering Science*, 161, pp. 138-150, 2017
14. A. Baricci, R. Mereu, M. Messaggi, M. Zago, F. Inzoli, A. Casalegno, **“APPLICATION OF COMPUTATIONAL FLUID DYNAMICS TO THE ANALYSIS OF GEOMETRICAL FEATURES IN PEM FUEL CELLS FLOW FIELDS WITH THE AID OF IMPEDANCE SPECTROSCOPY”**, *Applied Energy*, 205, pp. 670-682, 2017
15. G. Ferrari, D. Federici, P. Schito, F. Inzoli, R. Mereu, **“CFD STUDY OF SAVONIUS WIND TURBINE: 3D MODEL VALIDATION AND PARAMETRIC ANALYSIS”**, *Renewable Energy*, 105, pp. 722-734, 2017
16. R. Mereu, D. Federici, G. Ferrari, P. Schito, F. Inzoli, **“PARAMETRIC NUMERICAL STUDY OF SAVONIUS WIND TURBINE INTERACTION IN A LINEAR ARRAY”**, *Renewable Energy*, 113, pp. 1320-1332, 2017

17. G. Besagni, A. Di Pasquali, L. Gallazzini, E. Gottardi, L.P.M. Colombo, F. Inzoli, **"THE EFFECT OF ASPECT RATIO IN COUNTER-CURRENT GAS-LIQUID BUBBLE COLUMNS: EXPERIMENTAL RESULTS AND GAS HOLDUP CORRELATIONS"**, International Journal of Multiphase Flow, 94, pp. 53-78, 2017
18. G. Besagni, G.R. Guédon, F. Inzoli, **"COMPUTATIONAL FLUID-DYNAMIC MODELING OF THE MONO-DISPERSED HOMOGENEOUS FLOW REGIME IN BUBBLE COLUMNS"**, Nuclear Engineering and Design, 331, pp. 222-237, 2018
19. D. Bravo-Berguño, R. Mereu, P. Cavalcante, M. Carlini, A. Ianni, A. Goretti, F. Gabriele, T. Wright, Z. Yokley, R.B. Vogelaar, F. Calaprice, F. Inzoli, **"THE BOREXINO THERMAL MONITORING & MANAGEMENT SYSTEM AND SIMULATIONS OF THE FLUID-DYNAMICS OF THE BOREXINO DETECTOR UNDER ASYMMETRICAL, CHANGING BOUNDARY CONDITIONS"**, Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 885, pp. 38-53, 2018
20. G. Besagni, L. Gallazzini, F. Inzoli, **"EFFECT OF GAS SPARGER DESIGN ON BUBBLE COLUMN HYDRODYNAMICS USING PURE AND BINARY LIQUID PHASES"**, Chemical Engineering Science, 176, pp. 116-126, 2018
21. M. Messaggi, P. Canzi, R. Mereu, A. Baricci, F. Inzoli, A. Casalegno, M. Zago, **"ANALYSIS OF FLOW FIELD DESIGN ON VANADIUM REDOX FLOW BATTERY PERFORMANCE: DEVELOPMENT OF 3D COMPUTATIONAL FLUID DYNAMIC MODEL AND EXPERIMENTAL VALIDATION"**, Applied Energy, 228, pp. 1057-1070, 2018.
22. Q. Dang Le, R. Mereu, G. Besagni, V. Dossena, F. Inzoli, **"COMPUTATIONAL FLUID DYNAMICS MODELING OF FLASHING FLOW IN CONVERGENT-DIVERGENT NOZZLE"**, Journal of Fluids Engineering, Transactions of the ASME, 140 (10), art. no. 101102, 2018
23. E. Ranaee, F. Inzoli, M. Riva, A. Cominelli, A. Guadagnini, **"PROPAGATION TO RESERVOIR SIMULATION OF UNCERTAINTY ASSOCIATED WITH THREE-PHASE RELATIVE PERMEABILITY MODELS WITH HYSTERESIS"** Society of Petroleum Engineers - SPE Europe featured at 80th EAGE Conference and Exhibition, 2018
24. E. Ranaee, F. Inzoli, M. Riva, G. Maddinelli, A. Cominelli, A. Guadagnini, **"NUMERICAL ASSESSMENT OF WATER ALTERNATING GAS PRACTICES IN THE PRESENCE OF HYSTERESIS EFFECTS ON RELATIVE PERMEABILITY"**, 16th European Conference on the Mathematics of Oil Recovery, ECMOR 2018.
25. G. Besagni, F. Inzoli, **"BUBBLE SIZES AND SHAPES IN A COUNTER-CURRENT BUBBLE COLUMN WITH PURE AND BINARY LIQUID PHASES"**, Flow Measurement and Instrumentation, 67, pp. 55-82, 2019
26. E. Ranaee, F. Inzoli, M. Riva, A. Guadagnini, **"HYSTERESIS EFFECTS OF THREE-PHASE RELATIVE PERMEABILITIES ON BLACK-OIL RESERVOIR SIMULATION UNDER WAG INJECTION PROTOCOLS"** Journal of Petroleum Science and Engineering, pp. 1161-1174, 2019.
27. F. Inzoli, M. Masi, F. Resta, **"LE OPPORTUNITÀ PER LE IMPRESE: SOSTENIBILITÀ, INNOVAZIONE, EFFICIENZA"**, in Energia, Innovazione e Competitività, a cura di F. Di Amato, Ed. Assolombarda, pp. 118-131., 2019
28. Ghorbani, B., Shirmohammadi, R., Amidpour, M., Inzoli, F., Rocco, M., **"DESIGN AND THERMOECONOMIC ANALYSIS OF A MULTI-EFFECT DESALINATION UNIT EQUIPPED WITH A CRYOGENIC REFRIGERATION SYSTEM"**, Energy Conversion and Management, 202, pp. 112208-112226, 2019.
29. Mereu, R., Passoni, S., Inzoli, F., **"SCALE-RESOLVING CFD MODELING OF A THICK WIND TURBINE AIRFOIL WITH APPLICATION OF VORTEX GENERATORS: VALIDATION AND SENSITIVITY ANALYSES"**, Energy, 187, pp. 1-15, 2019
30. Guédon, G.R., Inzoli, F., Riva, M., Guadagnini, A., **"PORE-SCALE VELOCITIES IN THREE-DIMENSIONAL POROUS MATERIALS WITH TRAPPED IMMISCIBLE FLUID"**, Physical Review, 100 (4), pp. 1-9, 2019
31. Besagni, G., Gallazzini, L., Inzoli, F., **"ON THE SCALE-UP CRITERIA FOR BUBBLE COLUMNS"**, Petroleum, 5 (2), pp. 114-122, 2019.
32. Besagni, G., Inzoli, F., Ziegenhein, T., Lucas, D., **"THE PSEUDO-HOMOGENEOUS FLOW REGIME IN LARGE-SCALE BUBBLE COLUMNS: EXPERIMENTAL BENCHMARK AND COMPUTATIONAL FLUID DYNAMICS MODELLING"**, Petroleum, 5 (2), pp. 141-160, 2019.

33. Besagni, G., Inzoli, F., Zieghenein, T., Lucas, D., **“EXPERIMENTAL STUDY OF LIQUID VELOCITY PROFILES IN LARGE-SCALE BUBBLE COLUMNS WITH PARTICLE TRACKING VELOCIMETRY”**, Journal of Physics: Conference Series, 1224 (1), pp. 1-10, 2019.
34. Quang, D.L., Mereu, R., Besagni, G., Dossena, V., Inzoli, F., **“NUMERICAL MODELLING OF FLASHING FLOW PHASE CHANGE IN CONVERGENT-DIVERGENT NOZZLE: A SENSITIVITY ANALYSIS”**, Journal of Physics: Conference Series, 1224 (1), art. no. 012010, pp. 1-19, 2019.
35. Besagni, G., Inzoli, F., **“PREDICTION OF BUBBLE SIZE DISTRIBUTIONS IN LARGE-SCALE BUBBLE COLUMNS USING A POPULATION BALANCE MODEL”**, Computation, 7 (1), art. no. 17, pp. 1-16, 2019.
36. Alikhani, P., Guadagnini, A., Inzoli, F., **“FEEDBACK BETWEEN GRAVITY AND VISCOUS FORCES IN TWO-PHASE BUCKLEY-LEVERETT FLOW IN RANDOMLY HETEROGENEOUS PERMEABILITY FIELDS”**, 4th EAGE Conference on Petroleum Geostatistics, art. no. ThP08, pp. 1-5, 2019.
37. Ziegenhein, T., Lucas, D., Besagni, G., Inzoli, F., **“EXPERIMENTAL STUDY OF THE LIQUID VELOCITY AND TURBULENCE IN A LARGE-SCALE AIR-WATER COUNTER-CURRENT BUBBLE COLUMN”**, Experimental Thermal and Fluid Science, 111, pp. 1-21, 2020.
38. Moghadasi, L., Ranaee, E., Renna, D., Bartosek, M., Maddinelli, G., Masserano, F., Cominelli, A., Inzoli, F., Guadagnini, A., **“COMBINING TWO- AND THREE-PHASE COREFLOWING EXPERIMENTS FOR RESERVOIR SIMULATION UNDER WAG PRACTICES”**, International Petroleum Technology Conference 2020, IPTC 2020, 2020.