GIANLUCA VALENTI

VIA RADAELLI 11/13, 20090 SEGRATE (MI), ITALY
+39 – 328.3561713

MILANO, 11/06/1977
GIANLUCA.VALENTI@GMAIL.COM

Work Experience

Politecnico di Milano - Milan, Italy — Present
Associate Professor (formerly Assistant Professor) — 07/2015

- Numerical research: carbon capture via chemical absorption; biogas and biomethane production and utilization; hydrogen liquefaction; innovative systems for waste heat to electricity
- Experimental research: development and testing of micro-cogeneration systems and of positive-displacement fluid machinery (07/2015 12/2008)
- Teaching: lecturer of Energy Conversion
- Advisory and co-advisory: approximately a dozen graduate theses per year
- Responsibilities:
  - Chief of Operations of the Laboratory of Micro-Cogeneration
  - Responsible for the international mobility for students within the degree in Energy Engineering

Valenti Energie S.r.l. - Milan, Italy — Present
Co-founder — 05/2013

- Implementation of cross-industry technologies for energy efficiency improvement
- Realization of an innovative system for waste heat to electricity
- Realization of a mini-compressor for electronics cooling

Skolkovo Innovation Center – Moscow, Russian Federation — Present
Member of Technical Committee — 01/2013

- Technical review of proposals of investments in energy-related projects

Quadrivio SGR - Milan, Italy — Present
Member of Technical Committee — 07/2012

- Technical review of proposals of investments in renewable energy-related projects

Politecnico di Milano - Milan, Italy — 12/2008
Research fellow — 07/2006

- Methods for minimizing the emission of greenhouse gases from power plants
- Development of a system for creating synthetic mixture from gas bottles

Stanford University - Stanford, CA U.S.A. — 02/2005
Research assistant — 09/2003

- Development of three-phase permeability models for a reservoir simulator

Snamprogetti - Milan, Italy — 07/2002
Intern — 11/2001

- Stress analysis of the high temperature lines of a natural gas combined cycle

University of Illinois at Chicago - Chicago, IL U.S.A. — 08/2001
Research assistant — 09/1999

- Techno-economic assessment of medium-size cogeneration systems

Education

Politecnico di Milano — Milan, Italy — 05/2006
Degree: Ph.D. in Energy Engineering — Grade: *cum laude* — 03/2003
Thesis: "Liquid hydrogen from clean coal"

Stanford University — Stanford, CA U.S.A. — 02/2005
Degree: M.Sc. in Petroleum Engineering — Grade: 3.66/4 — 09/2003
Thesis: "Streamline-based simulation of three-phase, multicomponent flows in porous media"

Politecnico di Milano — Milan, Italy — 07/2002
Degree: Laurea in Mechanical Engineering — Grade: 100/100 *cum laude* — 09/1996
Thesis: "Analisi ed ottimizzazione dei circuiti critici di una centrale a ciclo combinato"

University of Illinois at Chicago — Chicago, IL U.S.A. — 08/2001
Degree: M.Sc. in Mechanical Engineering — Grade: 4.00/4 — 08/1999
Thesis: "An assessment of combined heat and power for medium-sized applications"

Recent Projects

European Commission-funded projects

- H2Trust: "Development of H_2 Safety Expert Groups and due diligence tools for public awareness […]"
- Cachet II: "Carbon Dioxide Capture and Hydrogen Production with Membranes"
- Caesar: "Carbon-free electricity by SEWGS"

U.S.A. Department of Energy-funded projects:

- "Development of Mixed-Salt Technology for Carbon Dioxide Capture from Coal Power Plants" with SRI International

National and Regional Government-funded projects

- Microgen 30: "Sistema di micro-cogenerazione di taglia medio-piccola (30 kWe) basato su celle a combustibile […]"
- Microgen: "Sviluppo e realizzazione di un micro-cogeneratore a ciclo Stirling alimentato a gas naturale"
- Agrengest: "Analisi degli aspetti operativi e gestionali di impianto agro-energetici in Lombardia"

Industry-funded projects

- Saipem: “By-pass di recuper energetico per un impianto di rigassificazione LNG”
- AsjaGen: “Prove di caratterizzazione energetica e ambientale di un micro-cogeneratore da 20 kWel […]”
- Snam Rete Gas: “Attività di assistenza tecnica nel campo della misura di qualità del gas, della simulazione di reti […]”
- Eni: “Energy Management in Up – Mid Stream of Oil and Gas Industry”
- Enel: “Valutazione del processo Chilled Ammonia per la cattura della CO_2”

Honors

- Five awards (four national and one international) for advised graduate thesis
- Finalist Intensa San Paolo StartUpInitiative 2011 competition
- Finalist Politecnico di Milano Idea2Product 2011 prize
- 3-year scholarship by the Italian Government during the Ph.D.
- 15-month scholarship by Stanford University during the M.Sc.
- 2-year scholarship by University of Illinois at Chicago during the M.Sc.
- 2-year scholarship by Nuovo Pignone S.p.a. during Laurea

Recent Publications & Patents

International journals

- G. Guandalini, S. Campanari, G. Valenti. Comparative assessment and safety issues in state-of-the-art hydrogen production technologies. Int. J. Hydrogen Energy, 41(42), pages 18901–18920, 2016
- G. Valenti, A. Arcidiacono, J. Nieto. Assessment of membrane plants for biogas upgrading to biomethane at zero methane emission. Biomass and Bioenergy, 2016
- G. Valenti, P. Silva, N. Fergnani, S. Campanari, *et al*. “Experimental and numerical study of a micro-cogeneration Stirling unit under diverse conditions of the working fluid”. Applied Energy, 2015
- G. Valenti, S. Murgia, G. Contaldi, A. Valenti. “Experimental evidence of the thermal effect of lubricating oil sprayed in sliding-vane air compressors”. Case Studies in Thermal Engineering, 4, 2014
- R. Cipollone, G. Valenti, G. Bianchi, S. Murgia, G. Contaldi, T. Calvi. “Energy saving in sliding vane rotary compressors using pressure swirl oil atomizers”. J. Process Mech. Eng., 2014
- S. Campanari, G. Valenti, E. Macchi, G. Lozza, N. Ravidà, N. Lazzari. “Development of a microcogeneration laboratory and testing of a natural gas chp unit based on PEM fuel cells”. Applied Thermal Energy, 71(2), 2014
- G. Valenti, L. Colombo, S. Murgia, A. Lucchini, A. Sampietro, A. Capoferri, L. Araneo. “Thermal effect of lubricating oil in positive-displacement air compressors”. Applied Thermal Engineering, 51(1-2), 2013

International and national conferences

- G. Valenti, S. Murgia, I. Costanzo, G. Contaldi, A. Valenti. Modeling and testing the thermal effect of lubricating oil spraying in sliding-vane air compressors using pressure-swirl nozzles. 23rd Int. Compressor Eng. Conference, 2016.
- L. Mastropasqua, S. Campanari, G. Valenti, A. Guariniello, S. Modena, F. Ghigliazza. Testing and preliminary modelling of a 2.5 kW micro-CHP SOFC unit. PowerEnergy 2016-59327. 2016.
- D. Bonalumi, G. Valenti, S. Lillia, P. L. Fosbol, K. Thomsen. A layout for the carbon capture with aqueous ammonia without salt precipitation. Energy Procedia, 86, pages 134-143, 2016.
- D. Bonalumi, G. Valenti, S. Lillia, P. L. Fosbol, K. Thomsen. A layout for the carbon capture with aqueous ammonia without salt precipitation. Energy Procedia, 2016

Contribution to books

- G. Valenti. “Hydrogen liquefaction and liquid hydrogen storage” in Compendium to Hydrogen Energy - Volume 2: Hydrogen storage, transmission, transportation and infrastructure. Woodhead publishing. To be published in 2015

Patents

- G. Valenti, A. Valenti, C. Valenti. Sistema di produzione aria compressa. Italian patent application, 2016.
- A. Valenti, C. Valenti, G. Valenti. Sistema igienico di apertura delle lattine. Italian patent application, 2015.
- G. Valenti, A. Valenti, C. Valenti, Method and system for converting thermal power, delivered from a variable temperature heat source, into mechanical power. PCT application, 2010.

Full list available at http://www.gecos.polimi.it/staff/scheda_persona.php?id=151

Other Information

Reviewer

- Journals: Int. J. Hydrogen Energy and Int. J. Greenhouse Gas Control

Languages

- Italian: mother language
- English: proficient

IT skills

- General and process software: Office suite, Aspen Process Engineering suite, Refprop
- Programming languages: Matlab and Fortran

Family

- Happily married with one small son and one big dog

Interests

- open-water swimming, on- and off-road cycling, running (formerly triathlon athlete)

Milan, Italy, 15/01/2017