CURRICULUM VITAE

ALBERTO BENATO

Personal Information

Address

Phone

E-Mail

Nationality	Italian
Place and Date of Birth	Padova, September 26, 1985

Alberto Benato

Position

16/02/2015 – Present **Post-Doctoral Research,** Department of Industrial Engineering - University of Padova, Padova, Italy.

Research Performance Indicators (Last Update: November 07, 2015)

	Google Scholar	Scopus	Thomson Reuters Web of Science	ResearchGate Scientific Network
h-index	4	2	2	-
i10-index	1	-	-	-
Year of 1st Publ.	2012	2012	2012	2012
Publications	15	11	10	17
Citation	36	6	6	22
i10-index	1	-	-	-
RG score	-	-	-	14,14
Reads	-	-	-	657
Profile views	-	-	-	147
Impact points	-	-	-	22,84

Education

17/04/2015	**Ph.D. in Industrial Engineering – Curriculum Energy Engineering with the mention of "Doctor Europaeus"**, University of Padova, Padova, Italy.
06/2011 – 09/2011	**Qualification of Professional Engineer**, University of Padova, Padova, Italy.
10/2007 – 12/2010	**Master of Science in Energy Engineering** (110/110), University of Padova, Padova, Italy. *Master Degree Thesis*: Performance Analysis of a 1.5 kW Horizontal-Axis Wind Turbine (HAWT) *Supervisor*: Prof. Giorgio Pavesi
10/2004 – 09/2007	**Bachelor of Science in Energy Engineering**, University of Padova, Padova, Italy. *Bachelor Degree Thesis*: Micropump: Characteristics of an Innovative Rotary Shaft Pump (RSP) *Supervisor*: Prof. Giorgio Pavesi
09/1999 – 07/2004	**High School Degree in Electrotechnics**, Istituto Tecnico Industriale Statale Guglielmo Marconi, Padova, Italy.

Post-Lauream Activity

16/02/2015 – Present	**Post-Doctoral Research,** Department of Industrial Engineering - University of Padova, Padova, Italy. *Research Subject*: DSO: a fast tool for design and energy management optimization of Hybrid Renewable Energy Systems. *Supervisor*: Prof. Anna Stoppato This two years project was selected and then financed by "Giorgio Levi Cases" Interdepartmental Centre for Energy Economics and Technology.
17/05/2014 – 05/08/2014	**Ph.D. Guest (External Stay)**, Technical University of Denmark, Department of Mechanical Engineering – Thermal Energy Section (Denmark). *Research Subject*: Design, part-load and dynamic analysis of different configurations of a combined cycle gas turbine with air bottoming cycle plant for off-shore applications. *Supervisor*: Prof. Fredrik Haglind

30/09/2013 – 01/04/2014	**Ph.D. Guest (External Stay)**, Technical University of Denmark, Department of Mechanical Engineering – Thermal Energy Section (Denmark). *Research Subject*: Hot Spot analysis of once-through boilers for organic Rankine cycle power plant *Supervisor*: Prof. Fredrik Haglind
01/2012 – 12/2014	**Ph.D. Student in Industrial Engineering - Curriculum in Energy Engineering**, Department of Industrial Engineering - University of Padova, Padova, Italy. *Research Subject*: Power Plant Behaviour During Transient Operating Conditions *Supervisor*: Prof. Anna Stoppato *Co-supervisor*: Prof. Alberto Mirandola
07/2011 – 12/2011	**Assistant Researcher**, Department of Mechanical Engineering - University of Padova, Padova, Italy. *Research Subject*: Influence of Load Changes on the Components Life of Thermal Power Plants *Supervisors*: Prof. Alberto Mirandola and Prof. Anna Stoppato
01/2011 – 06/2011	**Research Grant**, Department of Mechanical Engineering, University of Padova, Padova, Italy. *Research Subject*: Influence of Load Changes on the Components Life of Thermal Power Plants *Supervisors*: Prof. Alberto Mirandola and Prof. Anna Stoppato

Other Training Activities

17/11/2014 – 28/11/2014	**Advanced Training Course** – Integration of Renewable Energy Solutions in the Mediterranean Electricity Markets, Organized by Politecnico di Milano and RES4MED – Milano, Italy.
11/06/2012 – 23/06/2012	**Summer School of Thermodynamics** - A High-Profile Course for International Students, Organized by University of Roma "La Sapienza" – Anzio, Italy.
04/2008 – 07/2011	**English Courses**, Level A2 – B2, Stendhal British Institute, Padova, Italy.

Teaching Experience

01/10/2015 – Present

Teaching Assistant at the following courses (30 hours):

- **Energy Conversion Systems and Machineries (Macchine 1)**, prof. Guido Ardizzon, Bachelor Degree in Mechanical Engineering, University of Padova, Padova, Italy.
- **Energy Conversion Systems and Machineries (Macchine – ultimo numero di matricola da 0 a 4)**, prof. Giorgio Pavesi, Bachelor Degree in Energy Engineering, University of Padova, Padova, Italy.

01/10/2014 – 30/09/2015

Teaching Assistant at the following courses (Tutor Junior) (90 hours):

- **Energy Conversion Systems and Machineries (Macchine 1)**, prof. Guido Ardizzon, Bachelor Degree in Mechanical Engineering, University of Padova, Padova, Italy.
- **Energy Conversion Systems and Machineries (Macchine 2)**, prof. Guido Ardizzon, Master Degree in Mechanical Engineering, University of Padova, Padova, Italy.
- **Energy Conversion Systems and Machineries (Macchine con Laboratorio)**, prof. Renzo Tosato, Bachelor Degree in Mechanical Engineering, University of Padova, Padova, Italy.
- **Energy Conversion Systems and Machineries (Macchine)**, prof. Alberto Mirandola, Bachelor Degree in Energy Engineering, University of Padova, Padova, Italy.
- **Industrial Technical Drawing (Disegno tecnico industriale)**, prof. Gianmaria Concheri, Bachelor Degree in Energy Engineering , Bachelor Degree in Mechanical Engineering and Bachelor Degree in Aerospace Engineering, University of Padova, Padova, Italy.

01/10/2013 – 30/09/2014

Teaching Assistant at the following courses (Tutor Junior) (40 hours):

- **Energy Conversion Systems and Machineries (Macchine 2)**, prof. Guido Ardizzon, Master Degree in Mechanical Engineering, University of Padova, Padova, Italy.
- **Energy Conversion Systems and Machineries (Macchine 1)**, prof. Guido Ardizzon, Bachelor Degree in Mechanical Engineering, University of Padova, Padova, Italy.
- **Energy Conversion Systems and Machineries (Macchine)**, prof. Giovanna Cavazzini, Bachelor Degree in Energy Engineering, University of Padova, Padova, Italy.
- **Energy Conversion Systems and Machineries (Macchine)**, prof. Giorgio Pavesi, Bachelor Degree in Energy Engineering, University of Padova, Padova, Italy.
- **Energy Conversion Systems and Machineries (Macchine a fluido)**, prof. Renzo Tosato, Master Degree in Aerospace Engineering, University of Padova, Padova, Italy.

	- Energy Conversion Systems and Machineries (Macchine con laboratorio), prof. Renzo Tosato, Bachelor Degree in Mechanical Engineering, University of Padova, Padova, Italy.
25/03/2013 – 30/06/2013	**Lectures at the Course: "Instruments And Measurement Of Hydropower Potential" (16 Hours)**, Course for Green Economy Technical in the Mountain Environment. Project Co-Financed by The European Social Fund.
20/12/2012 – 15/06/2013	**Teaching Assistant at the following courses (30 hours):** **- Energy Conversion Systems and Machineries (Macchine 2)**, prof. Guido Ardizzon, Master Degree in Mechanical Engineering, University of Padova, Padova, Italy. **- Energy Conversion Systems and Machineries (Macchine)**, prof. Giovanna Cavazzini, Bachelor Degree in Energy Engineering, University of Padova, Padova, Italy. **- Energy Conversion Systems and Machineries (Macchine a fluido)**, prof. Renzo Tosato, Master Degree in Aerospace Engineering, University of Padova, Padova, Italy. **- Energy Conversion Systems and Machineries (Macchine con laboratorio)**, prof. Renzo Tosato, Bachelor Degree in Mechanical Engineering, University of Padova, Padova, Italy.
11/11/2011 – 28/01/2012	**Teaching Assistant at the following course (12 hours):** **- Energy Conversion Systems and Machineries (Macchine)**, prof. Giorgio Pavesi, Bachelor Degree in Energy Engineering, University of Padova, Padova, Italy.

Bachelor and Master Thesis Co-Supervisor

Present	*Ottimizzazione di un organic Rankine cycle per applicazione geotermica al variare della temperature della fonte*, Master Degree Thesis in Energy Engineering, University of Padova, Padova, Italy. (Stella A.)
2014/2015	*Modellazione di un impianto ORC cogenerativo per recupero di calore di scarto*, Master Degree Thesis in Energy Engineering, University of Padova, Padova, Italy. (Rapone R.) *Ottimizzazione ed analisi in regime dinamico di un ciclo ORC cogenerativo*, Master Degree Thesis in Energy Engineering, University of Padova, Padova, Italy. (Pezzuolo A.)
2013/2014	*Valutazione del potenziale di sviluppo dell'utilizzo della cogenerazione ad alta efficienza per il riscaldamento invernale ed il raffreddamento estivo*, Master Degree Thesis in Energy Engineering, University of Padova, Padova, Italy. (Cavasin V.)

2012/2013 — *Modello dinamico di un impianto combinato a tre livelli di pressione*, Master Degree Thesis in Energy Engineering, University of Padova, Padova, Italy. (Zulin G.)

2011/2012 — *Implementazione e studio di un impianto a ciclo Rankine organico alimentato da biomassa*, Master Degree Thesis in Energy Engineering, University of Padova, Padova, Italy. (Vizzotto F.)

Speaker at National and International Conferences

2015 — **Dynamic Simulation of a Three Pressure Level Heat Recovery Steam Generator,** The 28th International Conference on Efficiency, Cost, Optimization, Simulations and Environmental Impact of Energy Systems, June 30-July 3, 2015, Pau, France.

Optimal Design and Daily Operation of a Hybrid CHP System with Energy Storage, The 28th International Conference on Efficiency, Cost, Optimization, Simulations and Environmental Impact of Energy Systems, June 30-July 3, 2015, Pau, France.

2014 — **Dynamic Performance of a Combined Gas Turbine and Air Bottoming Cycle Plant for Off-shore Applications,** 12th Biennial Conference on Engineering Systems Design and Analysis, June 25-27, 2014, Copenhagen, Denmark.

Dynamic Behaviour Analysis of a Single Pressure Heat Recovery Steam Generator during Cycling Operation, The 27th International Conference on Efficiency, Cost, Optimization, Simulations and Environmental Impact of Energy Systems, June 15-19, 2014, Turku, Finland.

Optimal Design and Management of a Cogeneration System with Energy Storage, The 27th International Conference on Efficiency, Cost, Optimization, Simulations and Environmental Impact of Energy Systems, June 15-19, 2014, Turku, Finland.

2013 — **A comparison between two different approaches aimed at simulating the behaviour of combined cycles in transient conditions,** 8th Conference on Sustainable Development of Energy, Water and Environmental Systems, September 22-27 2013, Dubrovnik, Croatia.

2012 — **Influenza delle Variazioni di Carico sulla Vita degli Impianti Termoelettrici**, 67th National Congress of ATI; September 11-14, 2012, Trieste, Italy.

Participation in Research Contracts

10/2015 – Present	**Analysis and Improvement of a technology for industrial energy systems** (Analisi e miglioramento di una tecnologia di efficientamento dei sistemi energetici industriali), Research project developed with Centro Studi di Economia e Tecnica dell'Energia Giorgio Levi Cases and Galilei Engineering Srl, Padova, Italy.
01/2013 – 09/2013	**Stratify Downdraft Gasifier: Optimization of a Combustion Engine for Utilize Syngas**, VERAGRI Project, Padova, Italy.
10/2012 – 12/2012	**Thermodynamic Optimization of a High Pressure Washer,** University of Padova, Italy.

Collaboration with National and International Research Centers

Technical University of Denmark, DTU Mechanical Engineering.

University of Genova, Department of Naval, Electrical, Electronic and Telecommunication Engineering.

Kathmandu University, Department of Mechanical Engineering

Membership

2014 – Present	**The American Society of Mechanical Engineers (ASME)**
2012 - Present	**Associazione Termotecnica Italiana (ATI)**
	Ordine degli Ingegneri della Provincia di Padova

Review Activity

Energy

Sensors & Actuators: A. Physical

International Journal of Electrical Power and Energy Systems

Energies — Open Access Energy Research, Engineering and Policy Journal

ECOS 2015 – The 28th International Conference on Efficiency, Cost, Optimization, Simulations and Environmental Impact of Energy Systems, June 30-July 3, 2015, Pau, France.

ESDA 2014 – 12th Biennial Conference on Engineering Systems Design and Analysis, June 25-27, 2014, Copenhagen, Denmark.

Publications

- Journals

Benato A., Stoppato A., Mirandola A., Bracco S., *"LTE: a procedure to predict power plants dynamic behaviour and components lifetime reduction during transient operation"*, Applied Energy; DOI: 10.1016/j.apenergy.2015.10.162.

Stoppato A., Benato A., Destro N., Mirandola A., *"Design and Operation of a Cogeneration System with Energy Storage opportunity"*, Energy and Buildings, Available online 21 September 2015; DOI: 10.1016/j.enbuild.2015.09.036.

Benato A., Stoppato A., Bracco S. (2015), *"Dynamic simulation of combined cycle power plant cycling in the electricity market"*, Energy Conversion and Management, Available online 29 July 2015; DOI:10.1016/j.enconman.2015.07.050.

Alberto Benato, Anna Stoppato, Alberto Mirandola (2015), *"Dynamic behaviour analysis of a three pressure level Heat Recovery Steam Generator during transient operation"*, Energy, Available online 18 July 2015; DOI: 10.1016/j.energy.2015.06.117.

Benato A., Pierobon L., Kaern M. R., Haglind F., Stoppato A. (2015), *"Analysis of hot spots in boiler of organic Rankine cycle units during transient operation"*, Applied Energy, Volume 151, 1 August 2015, Pages 119-131. ISSN 0306-2619, doi:10.1016/j.apenergy.2015.04.055

Pierobon L., Benato A., Scolari E., Haglind F., Stoppato A. (2014), *"Waste Heat Recovery Technologies for Off-shore Platforms"*, Applied Energy, Volume 136, December 2014, Pages 228-241.

Benato A., Stoppato A., Bracco S. (2014), *"Combined Cycle Power Plant: A Comparison Between Two Different Dynamic Models to Evaluate Transient Behaviour and Residual Life"*, Energy Conversion and Management, Volume 87, November 2014, Pages 1269-1280.

Stoppato A., Cavazzini G., Benato A. (2013), *"Influenza degli impianti alimentati da fonti rinnovabili sulle strategie di gestione del sistema energetico"*, Atti e Memorie dell'Accademia Galileiana di Scienze, Lettere ed Arti in Padova. Parte II. Memorie della Classe di Scienze Matematiche e Naturali, ISSN 1592-1743.

Benato A., Stoppato A., Mirandola A. (2013), *"Influenza delle Variazioni di Carico sulla Vita degli Impianti Termoelettrici"*, La Termotecnica, March 2013, Pages 1-4.

- Conferences

Benato A., Stoppato A., Mirandola A., Destro N. (2015), *"Dynamic Simulation of a Three Pressure Level Heat Recovery Steam Generator"*, In Proceedings of ECOS 2015 – The 28th International Conference on Efficiency, Cost, Optimization, Simulations and Environmental Impact of Energy Systems, June 30-July 3, 2015, Pau, France.

Ferretto F., Stoppato A., Destro N., Benato A. (2015), *"Modelling of the Annual Performance of a CAES Plant and Relative Economic Analysis"*, In Proceedings of ECOS 2015 – The 28th International Conference on Efficiency, Cost, Optimization, Simulations and Environmental Impact of Energy Systems, June 30-July 3, 2015, Pau, France.

Stoppato A., Benato A., Destro N., Mirandola A. (2015), *"Optimal Design and Daily Operation of a Hybrid CHP System with Energy Storage"*, In Proceedings of ECOS 2015 – The 28th International Conference on Efficiency, Cost, Optimization, Simulations and Environmental Impact of Energy Systems, June 30-July 3, 2015, Pau, France.

Benato A., Pierobon L., Stoppato A., Haglind F. (2014), *"Dynamic Performance of a Combined Gas Turbine and Air Bottoming Cycle Plant for Off-shore Applications"*, In proceedings of the ASME 2014 12th Biennial Conference on Engineering Systems Design and Analysis, June 25-27, 2014, Copenhagen, Denmark.

Stoppato A., Cavazzini G., Benato A., Destro N. (2014), *"Optimal Design and Management of a Hybrid Photovoltaic Pump Hydro Energy Storage System"*, In proceedings of the ASME 2014 12th Biennial Conference on Engineering Systems Design and Analysis, June 25-27, 2014, Copenhagen, Denmark.

Benato A., Stoppato A., Bracco S. (2014), *"Dynamic Behaviour Analysis of a Single Pressure Heat Recovery Steam Generator during Cycling Operation"*, In Proceedings of ECOS 2014 – The 27th International Conference on Efficiency, Cost, Optimization, Simulations and Environmental Impact of Energy Systems, June 15-19, 2014, Turku, Finland.

Stoppato A., Benato A., Destro N., Mirandola A. (2014), *"Optimal Design and Management of a Cogeneration System with Energy Storage"*, In Proceedings of ECOS 2014 – The 27th International Conference on Efficiency, Cost, Optimization, Simulations and Environmental Impact of Energy Systems, June 15-19, 2014, Turku, Finland.

Benato A., Bracco S., Stoppato A. (2013), *"A Comparison Between Two Different Approaches Aimed at Simulating the Behaviour of Combined Cycles in Transient Conditions"*, Accepted as Archival at 8th Conference on Sustainable Development of Energy, Water and Environment Systems; September 22-27, 2013, Dubrovnik, Croatia.

Benato A., Stoppato A., Mirandola A. (2012), *"Influenza delle Variazioni di Carico sulla Vita degli Impianti Termoelettrici"*, In Proceedings of ATI 2012 – 67th National Congress of The Associazione Termotecnica Italiana; Semptember 11-14, 2012, Trieste, Italy, Pages 1-10.

Stoppato A., Benato A., Mirandola A. (2012), *"Assessment of Stresses and Residual Life of Plant Components in View of Life-Time Extension of Power Plants"*, In Proceedings of ECOS 2012 - The 25th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, June 26-29, 2012, Perugia, Italy, Pages 1-10.

- Book Chapters

Stoppato A., Benato A., Mirandola A. (2015), *"Gas Turbines and Combined Cycle Gas Turbine"*, Book Chapter, Compendium of Energy Science and Technology (in 10 Vols), Vol. 9, Published by Stadium Press LLC, USA.

Mirandola A., Stoppato A., Benato A. (2015), *"Steam Power Generation"*, Book Chapter, Handbook of Clean Energy Systems, Published by John Wiley & Sons, Ltd., The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, United Kingdom.

- Other Publications

Benato A. (2015), *"Power Plant Behaviour during Transient Operating Conditions"*, Ph.D. Thesis, University of Padova, Padova, Italy.

Benato A. (2011), *"Influenza delle Variazioni di Carico sulla Vita dei Componenti degli Impianti Termoelettrici"*, Scientific Report, University of Padova, Padova, Italy.

Benato A. (2010), *"Performance Analysis of a 1.5 kW Horizontal-Axis Wind Turbine (HAWT)"*, Master Degree Thesis, University of Padova, Padova, Italy.

Benato A. (2007), *"Micropump: Characteristics of an Innovative Rotary Shaft Pump (Micropompa: Caratteristiche di una Pompa Innovativa RSP)"*, Bachelor Degree Thesis, University of Padova, Padova, Italy.

- Other Works Accepted for Publication

Benato A., Stoppato A., Mirandola A., Destro N., Bracco S., *"Superheater and drum lifetime estimation: an approach based on dynamic analysis"*, Journal of Energy Resources Technology

Ferretto F., Stoppato A., Destro N., Benato A., *"Modelling of the Annual Performance of a CAES Plant"*, International Journal of Energy and Environmental Engineering

Alex Pezzuolo, Alberto Benato, Anna Stoppato, Alberto Mirandola, *"The ORC-PD: a versatile tool for fluid selection and Organic Rankine Cycle unit design"*, Energy

Anna Stoppato, Alberto Benato, Nicola Destro, Alberto Mirandola, *"Components design and daily operation optimization of a hybrid system with energy storages"*, Energy

Anna Stoppato, Alberto Benato, *"IMPORTANCE OF ENERGY STORAGE"*. The World Scientific Handbook of Energy, Energy Storage - Volume 4.

Language Skills

Mother tongue	Italian
Other language	English (Independent User)

Computer Skills and Competences

Office Suite	- Microsoft Office (Word, Excel, PowerPoint, Outlook) - Apache OpenOffice
Modelling Software	- Ansys CFX - C++ - Dymola/Modelica Language - DraftSight

- EES
- Fortran
- Homer Energy
- Latex
- MATLAB/Simulink
- NX
- OpenModelica
- Python
- Solid Edge
- Optimization Tools

Date, 17/01/2016

Signature