

# CURRICULUM VITAE

**ANTONIO ROSATO**

**Assistant Professor – Department of Architecture and Industrial Design “Luigi Vanvitelli” of  
Second University of Naples**

## **EDUCATION AND TRAINING**

FROM JULY 04TH, 2011 UP TO JULY 08TH, 2011

Attendance to the Summer School on Thermodynamics titled “Indoor Air Quality” organized by University of Sannio (Benevento, Italy)

2009

- Ph.D. on Energetics at University of Palermo (Palermo, Italy) with final thesis titled “Experimental analysis of R744 and R422D heat transfer coefficients and pressure drops during evaporation” (Tutors: Prof. R.M.A. Mastrullo, Prof. G.P. Vanoli)

- Attendance to the two-days course “Matlab Fundamentals” organized by The MathWorks s.r.l. (Torino, Italy)

- Attendance to the one-day course “MATLAB for data processing and visualization” organized by The MathWorks s.r.l. (Torino, Italy)

- Attendance to the one-day course “MATLAB programming techniques” organized by The MathWorks s.r.l. (Torino, Italy)

FROM JULY 07TH, 2008 UP TO JULY 11TH, 2008

Attendance to the Summer School on Thermodynamics title “Thermophysics of building envelope” organized by University of Sannio (Benevento, Italy)

FROM JUNE 04TH, 2007 UP TO JUNE 08TH, 2007

Attendance to the course titled “Fundamentals of Microscale Heat Transfer: Boiling, Condensation, Single and Two Phase Flows” organized by École Polytechnique Fédérale de Lausanne (Lausanne, Switzerland)

FROM JUNE 12TH, 2006 UP TO 16TH, 2006

Attendance to the course titled “Fundamentals of Microscale Heat Transfer: Boiling, Condensation, Single and Two Phase Flows” organized by École Polytechnique Fédérale de Lausanne (Lausanne, Switzerland)

2005

Degree in Mechanical Engineering (5-years degree) at University of Naples Federico II (Naples, Italy) with final thesis in Heat Transfer titled “Heat conduction effects on mixed convection in horizontal channels with adiabatic and moving wall” (Tutors: Prof. V. Naso, Prof. O. Manca, Ph.D. A. Andreozzi; Final score: 110/110 cum laude)

## **WORKING AND ACADEMIC EXPERIENCES**

FROM DECEMBER 15TH, 2010 UP TO THIS DATE

Assistant Professor at the Department of Architecture and Industrial Design "Luigi Vanvitelli" of the Second University of Naples (Aversa, Italy).

Research activities as researcher:

- experimental analysis of micro-polygeneration;
- simulation of micro-polygeneration systems by using the whole-building simulation software TRNSYS
- energy, economic and environmental analyses of micro-polygeneration systems.

Current and past teachings:

- 2010-2011: "Energetics and Environmental Control" course teacher for undergraduate students;
- 2011-2012: "Special Plants" course teacher for undergraduate students;
- 2012-2013: " Design of Built Environment Control and Energetic Systems " course teacher for undergraduate students (in English);
- 2013-2014: " Design of Built Environment Control and Energetic Systems " course teacher for undergraduate students (in English);

FROM APRIL 1ST, 2009 UP TO DECEMBER 14TH, 2010

Employee at R&D department of the multinational company "Denso Thermal Systems S.p.A" (Torino, Italy) as person in charge of:

- 1) Matlab codes for dynamic simulation of condensers for automotive applications;
- 2) heat pump systems' energy performance and control logic for electric vehicles.

FROM JANUARY 1ST, 2006 UP TO DECEMBER 31ST, 2008

Ph.D. student at the Department of "Energetics, applied thermofluidodynamics and environment conditioning (D.E.TE.C)" of University of Naples Federico II.

Research activities as Ph.D. student:

- experimental evaluation of heat transfer coefficients and pressure drops of non-ozone depleting refrigerants (R407C, R417A, R134a, R422D, R744) during evaporation;
- experimental analysis of household freezer energy performances at varying the refrigerant charge and the freezer position;
- experimental evaluation of household freezer energy class;
- writing Matlab codes to simulate the household freezer operation during transient and steady-state operation.

Academic activities as Ph.D. student:

- academic collaboration to the courses "Thermodynamics and Heat transfer" and "Refrigerating Systems" for undergraduate mechanical engineering students at University of Naples Federico II;
- co-examiner of undergraduate mechanical engineering students at University of Naples Federico II;
- tutor of mechanical engineering students experimental graduation thesis on two-phase heat exchange at University of Naples Federico II.

## **MEETING ATTENDANCE**

- MicrogenIII - The 3rd edition of the International Conference on Microgeneration and Related Technologies (Naples, Italy, April 15-17, 2013);
- Microgen'II, University of Strathclyde (Glasgow, Scotland), Glasgow (Scotland), from April 04th, 2011 up to April 06th, 2011;
- New generation of non-ozone depleting synthetic refrigerants, Italian association for air conditioning,

heating and refrigeration (AICARR), Padova (Italy), June 04th, 2009;

- 63rd national congress of Italian thermodynamics association (ATI), University of Palermo (Palermo, Italy), Palermo (Italy), from September 23rd, 2008 up to September 26th, 2008;
- 62nd national congress of Italian thermodynamics association (ATI), University of Salerno (Salerno, Italy), Salerno (Italy), from September 11th, 2007 up to September 14th, 2007;
- 61th national congress of Italian thermodynamics association (ATI), University of Perugia (Perugia, Italy), Perugia (Italy), from September 12th, 2006 up to September 15th, 2006;
- XXIV national congress of Italian thermodynamics association on heat transfer (UIT), University of Naples Federico II (Naples, Italy), Napoli (Italy), from June 21st, 2006 up to June 23rd, 2006.

### **ADDITIONAL INFORMATION**

> Author of several scientific papers on Heat Transfer and Energetics published in international and national journals, and in the proceedings of international and national congresses

> Reviewer for international journals:

- International Journal of Refrigeration
- Applied Thermal Engineering
- Energy and Buildings
- Energy Conversion and Management
- International Journal of Thermal Sciences
- International Journal of Electrical Power & Energy Systems
- Fuel Processing Technology
- Environmental Engineering and Management Journal
- Environmental Biotechnology

> Member of International Energy Agency Annex 54 working group operating on the theme of "Integration of Micro-Generation and Related Energy Technologies in Buildings" (<http://www.iea-annex54.org/>)

> Scientific coordinator of three research agreement contracts signed by the Department of Architecture and Industrial Design "Luigi Vanvitelli" of the Second University of Naples with the multinational company "Denso Thermal Systems S.p.A" on condensers' performance simulation.

### **REFERENCES**

- 1) G. Ciampi, A. Rosato, S. Sibilio, Yearly operation of a building-integrated microcogeneration system in south Italy: energy and economic analyses, International Journal of Low-Carbon Technologies 0 (2013) pp. 1-16, doi: 10.1093/ijlct/ctt074, Online ISSN: 1748-1325.
- 2) S. Sibilio, P. Falconetti, A. Rosato, M. Scorpio, EFFECTIVENESS OF LIGHT PIPES IN ITALY, Plenary Reports Proceedings of IV International Environmental Congress "Ecology and Life Protection of Industrial-Transport complexes", Togliatti - Samara, Russia, September 18 -22, 2013. Editor: Prof. Andrey Vasilyev, ISBN: 978-5-8259-0733-8.
- 3) S. Sibilio, A. Rosato, M. Scorpio, Daylighting design in a low energy building, Proceedings of LUX EUROPA 2013, 12th European Lighting Conference, Krakow, Poland, September 17-19, 2013, pp. 251-256, Imprint: Polski Komitet Oswietleniowy SEP, ISBN: 978-83-910849-6-0.
- 4) A. Rosato, S. Sibilio, G. Ciampi, Energy, environmental and economic dynamic performance assessment

of different micro-cogeneration systems in a residential application, *Applied Thermal Engineering* 59 (2013) 599-617, ISSN: 1359-4311.

- 5) A. Rosato, S. Sibilio, M. Scorpio, A Review of Gas Engine Driven Heat Pumps for Residential Applications, *Proceedings of CLIMA 2013 - 11th REHVA World Congress and the 8th International Conference on Indoor Air Quality, Ventilation and Energy Conservation in Buildings*, June 2013 Prague, Czech Republic, Editors: Karel Kabele, Miroslav Urban, Karel Suchý, Miloš Lain, Published by: Society of Environmental Engineering (STP), Czech Republic, ISBN: 978-80-260-4001-9
- 6) A. ROSATO, M. SCORPIO, S. SIBILIO, Use of a scale model under artificial sky for daylighting design, *Atti del convegno "Le vie dei Mercanti - XI Forum Internazionale di Studi"*, pp. 1245-1252, 13-15 Giugno 2013, Aversa/Capri, La scuola di Pitagora editrice, ISBN: 978-88-6542-290-8
- 7) A. Rosato, S. Sibilio, G. Ciampi, Dynamic performance assessment of a building-integrated cogeneration system for an Italian residential application, *Energy and Buildings* 64 (2013) 343–358, ISSN: 0378-7788.
- 8) G. Ciampi, A. Rosato, S. Sibilio, ENERGY ANALYSIS OF A BUILDING-INTEGRATED MICRO-COGENERATION SYSTEM FOR A RESIDENTIAL APPLICATION IN SOUTH ITALY, *Proceedings of The 3rd edition of the International Conference on Microgeneration and Related Technologies*, Naples, Italy, April 15-17, 2013, ISBN: 9788890848902.
- 9) G. Ciampi, A. Rosato, M. Scorpio, S. Sibilio, INFLUENCE OF CLIMATIC CONDITIONS ON THE ENERGY PERFORMANCE OF A RESIDENTIAL BUILDING-INTEGRATED MICRO-COGENERATION SYSTEM, *Proceedings of The 3rd edition of the International Conference on Microgeneration and Related Technologies*, Naples, Italy, April 15-17, 2013, ISBN: 9788890848902.
- 10) A. Rosato, M. Scorpio, S. Sibilio, ENERGY PERFORMANCE ASSESSMENT OF THREE MCHP SYSTEMS INTEGRATED IN A MULTI-FAMILY HOUSE IN THE SOUTH OF ITALY, *Proceedings of The 3rd edition of the International Conference on Microgeneration and Related Technologies*, Naples, Italy, April 15-17, 2013, ISBN: 9788890848902.
- 11) G. Angrisani, A. Rosato, C. Roselli, M. Sasso, S. Sibilio, A. Unich, LOCAL EMISSIONS OF A RESIDENTIAL BUILDING-INTEGRATED MICRO-COGENERATION SYSTEM, *Proceedings of The 3rd edition of the International Conference on Microgeneration and Related Technologies*, Naples, Italy, April 15-17, 2013, ISBN: 9788890848902.
- 12) G. Angrisani, M. Canelli, A. Rosato, C. Roselli, M. Sasso, S. Sibilio, OPTIMAL THERMO-ECONOMIC CONTROL OF A MICRO-COGENERATION SYSTEM IN THERMAL LOAD SHARING APPROACH, *Proceedings of The 3rd edition of the International Conference on Microgeneration and Related Technologies*, Naples, Italy, April 15-17, 2013, ISBN: 9788890848902.
- 13) A. Rosato, S. Sibilio, Performance assessment of a micro-cogeneration system under realistic operating conditions, *Energy Conversion and Management* 70 (2013) 149–162, ISSN: 0378-7788
- 14) A. Rosato, S. Sibilio, Energy performance of a micro-cogeneration device during transient and steady-state operation: Experiments and simulations, *Applied Thermal Engineering*, vol. 52, pp. 478–491, 2013, ISSN: 1359-4311.

- 15) A. Rosato, S. Sibilio, PRELIMINARY EXPERIMENTAL CHARACTERIZATION OF A THREE-PHASE ABSORPTION HEAT PUMP, *International Journal of Refrigeration*, vol. 36, pp. 717–729, 2013, ISSN: 0140-7007.
- 16) G. Angrisani, M. Canelli, A. Rosato, C. Roselli, M. Sasso, S. Sibilio, Descrizione dei modelli dei sistemi fisici e degli algoritmi sviluppati per il controllo e l'ottimizzazione di micro\_poligeneratori distribuiti. Validazione sperimentale ed analisi di sensitività, ENEA - Ministero dello Sviluppo Economico, RICERCA DI SISTEMA ELETTRICO, Report RdS/2012/077, 2012.
- 17) P. Falconetti, A. Rosato, S. Sibilio, E. Pitzalis, Technical and architectural integration of a solar cooling system in a historical building, *Le vie dei Mercanti – X Forum Internazionale degli Studi*, Aversa-Capri, Italy, 21st May-2nd June 2012, La scuola di Pitagora editrice, pp. 1075-1081, ISBN: 978-88-6542-129-1.
- 18) A. Rosato, S. Sibilio, Calibration and validation of a model for simulating thermal and electric performance of an internal combustion engine-based micro-cogeneration device, *Applied Thermal Engineering*, vol. 45-46, pp. 79-98, 2012, ISSN: 1359-4311.
- 19) G. Angrisani, A. Rosato, C. Roselli, M. Sasso, S. Sibilio, Experimental results of a micro-trigeneration installation, *Applied Thermal Engineering*, vol. 38, pp. 78-90, 2012, ISSN: 1359-4311.
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- 21) G. Angrisani, C. Roselli, A. Rosato, M. Sasso, S. Sibilio, Risultati dell'attività sperimentale su sistemi distribuiti di micro-poligenerazione, ENEA - Ministero dello Sviluppo Economico - RICERCA DI SISTEMA ELETTRICO - Report RdS/2011/130, 2011.
- 22) G. Angrisani, C. Roselli, A. Rosato, M. Sasso, S. Sibilio, Sviluppo di un ambiente di monitoraggio, controllo e gestione remota di una rete di micro-poligeneratori distribuiti, ENEA - Ministero dello Sviluppo Economico - RICERCA DI SISTEMA ELETTRICO - Report RdS/2011/131, 2011.
- 23) G. Angrisani, C. Roselli, M. Sasso, A. Rosato, S. Sibilio, Analisi sperimentale di un sistema di micro-cogenerazione per utenze residenziali, *Atti del 66° Congresso Nazionale ATI*, Cosenza, 5-9 Settembre 2011, ISBN: 9788895267111.
- 24) G. Angrisani, A. Rosato, C. Roselli, M. Sasso, S. Sibilio, Trial results of domestic CHP & Thermally driven cooling technologies use in an office application, *2nd International Conference in Microgeneration and Related Technologies in Buildings*, Glasgow, 4-6 Aprile 2011.
- 25) R. Mastrullo, A.W. Mauro, A. Rosato, G.P. Vanoli, Carbon dioxide heat transfer coefficients and pressure drops during flow boiling: assessment of predictive methods, *International Journal of Refrigeration*, 33(6):1068-1085, 2010, ISSN: 0140-7007.
- 26) R. Mastrullo, A.W. Mauro, A. Rosato, G.P. Vanoli, Carbon dioxide local heat transfer coefficients during flow boiling in a horizontal circular smooth tube, *International Journal of Heat and Mass Transfer*, 52(19-20):4184-4194, 2009, ISSN: 0017-9310.

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- 32) F. de' Rossi, A.W. Mauro, A. Rosato, Confronto delle perdite di carico dell'R744 e dell'R134a durante l'evaporazione in convezione forzata, *Atti del 63° Congresso Nazionale ATI*, Palermo, 23-26 Settembre 2008, ISBN: 9788877588395.
- 33) A. W. Mauro, A. Rosato, G. P. Vanoli, Validazione sperimentale di un modello di calcolo delle prestazioni termiche di condensatori verticali a tubi e fili, *Atti del XXVI Congresso Nazionale UIT sulla Trasmissione del Calore*, Palermo, 23-25 Giugno 2008, ISBN: 9788846722171.
- 34) F. de Rossi, A.W. Mauro, A. Rosato, Analisi a priori dell'accuratezza nella misurazione del coefficiente di scambio termico locale dell'anidride carbonica, *Atti del 62° Congresso Nazionale ATI*, Salerno, 11-14 Settembre 2007, ISBN: 9788887998771.
- 35) A. W. Mauro, A. Rosato, G. P. Vanoli, Procedura di calcolo semplificata per l'ottimizzazione di un condensatore statico a tubo e fili, *Atti del 62° Congresso Nazionale ATI*, Salerno, 11-14 Settembre 2007, ISBN: 9788887998771.
- 36) R. Mastrullo, A.W. Mauro, A. Rosato, G.P. Vanoli, Coefficienti di scambio termico e perdite di carico durante l'evaporazione: messa a punto di un apparato sperimentale, *Atti del 61° Congresso Nazionale ATI*, Perugia, 12-15 Settembre 2006, ISBN:8860740487.