

CURRICULUM VITÆ

- NAME: **Fabio POLONARA**
- DATE & PLACE OF BIRTH: October 31, 1955; SENIGALLIA, Italy
- NATIONALITY: Italian
- CURRENT POSITION:
- (i) **Professor** of Fisica Tecnica (Applied Physics) at Dipartimento di Energetica of Università Politecnica delle Marche, Ancona, Italy;
 - (ii) **Director** of the Dipartimento di Energetica at Università Politecnica delle Marche.
 - (iii) **Vice-president** of Commission B1, "Thermodynamics and Transport Processes" of the International Institute of Refrigeration (Paris);
 - (iv) **Vice-president** of S.Tra.Te.G.I.E. srl, Academic spin-off of the Università Politecnica delle Marche
- EDUCATION:
- (iv) Doctor of Philosophy studies in Thermodynamics and Heat Transfer, leading to the degree of "**Dottore di ricerca in fisica tecnica**", at University of Ancona (Italy), 1984-1986, supervisor Pr. Marco Pacetti;
 - (iii) University studies in Mechanical Engineering leading to "**Laurea in Ingegneria Meccanica**", at University of Ancona (Italy), 1974-1981, supervisor Pr. Marco Pacetti;
 - (ii) Classical education leading to the Italian "Maturità Classica", obtained in Senigallia (Italy) at Liceo Classico "G. Perticari", 1969-1974;
 - (i) Primary and Secondary general education received in Senigallia (Italy), 1960-1969.
- POSTS HELD:
- (v) Since 2001 and at present he is **Professor** of Applied Physics at the Dipartimento di Energetica, University of Ancona, which has changed in 2003 its name in **Università Politecnica delle Marche**;
 - (iv) From 1997 to 2001 he is **Associate Professor** of Applied Physics at the Dipartimento di Energetica, University of Ancona;
 - (iii) From 1988 to 1997 he is "**Ricercatore Confermato**" [Research Associate] at the Dipartimento di Energetica, University of Ancona;

- (ii) "Professore a Contratto" at University of Chieti (Italy), Faculty of Architecture, for the course "Acustica, Illuminotecnica e Climatizzazione nell'Edilizia". Academic Year 1987/88;
- (i) Design engineer with Polonara R. & C. of Senigallia (Italy), HVAC plants manufacturers, 1982-1983.

INSTITUTIONAL SERVICES

- (vii) Since 2008 and at present, **Director** of the Dipartimento di Energetica at the Università Politecnica delle Marche;
- (vi) From 2001 to 2008, **Deputy Director** of the Dipartimento di Energetica at the Università Politecnica delle Marche;
- (v) Member of the Board of Directors for the Ph.D, course in Energetics at the Università Politecnica delle Marche;
- (iv) Member of Commission for Didactics at the School of Engineering of the Università Politecnica delle Marche;
- (iii) Italian coordinator for the bilateral agreement between University of Ulster (Jordanstown, UK) and Università Politecnica delle Marche for student mobility within the E.U. Socrates-Erasmus Programme
- (ii) Scientific representative for the Italian party in the bilateral agreement between Institute of Physical Chemistry of the Polish Academy of Sciences (Warsaw, Poland) and Università di Ancona (1997-2000);
- (i) Member of the Board of Examiners to adjudicate on Ph.D. theses at Madurai Kamaraj University (Madurai, India) and at Asian Institute of Technology (Bangkok, Thailand)

TEACHING ACTIVITIES

- (iv) Since Academic Year 1992/93 and at present he teaches the "Tecnica del Freddo" (Refrigeration) courses at the School of Engineering and at the School of Agriculture of the University of Ancona and of the Università Politecnica delle Marche;
- (iii) Since Academic Year 1993/94 and at present he teaches the "Fisica Tecnica" (Applied Physics) courses at the School of Engineering and at the School of Agriculture of the University of Ancona and of the Università Politecnica delle Marche;
- (ii) MED CAMPUS Programme, European Union, 1994, Msida, Malta, *Training Course on Renewable Energy Sources and their Practical Applications*, University of Malta;

- (i) COMETT Programme, European Union, 1990, Bologna, Italy, *Corso sperimentale di formazione su strumenti e tecnologie evoluti per il controllo energetico ambientale degli edifici*, ICIE 1992, Lisbon, Portugal, *Energia e comfort no projecto de edificios*, Istituto Superior Tecnico 1993, Barcelona, Spain, *El control energético-ambiental en la edificación*, Universitat Politècnica de Catalunya.
- Ph.D. SUPERVISION
- (iii) since 1994 he has supervised 11 Ph.D. students that have subsequently got their degree.
 - (ii) he is at present supervising 3 Ph.D. students.
 - (i) since 1992 he has supervised more than 120 Master students.
- PROFESSIONAL QUALIFICATION:
- (i) "Abilitazione alla professione di Ingegnere" obtained at Ancona (Italy) in fall term 1981 of "Esame di Stato".
- PROFESSIONAL SERVICES
- (iv) National Coordinator fo the research project "Sustainable Technologies for Buildings" carried out by several Research Institutes of the CNR (National Research Council)
 - (iii) Coordinator of the working group that prepared the "Energetic and Environmental Plan" for Ascoli Piceno Provincial Government (2006);
 - (ii) Coordinator of the working group that prepared the "Energetic and Environmental Plan" for Marche Regional Government (2003-2004);
 - (i) Referee for the Scientific Journals: *Applied Thermal Engineering, Food Research International, International Journal of Refrigeration, Fluid Phase Equilibria, Journal of Chemical and Engineering Data, Croatica Chemica Acta, Canadian Journal of Chemical Engineering*
- SCIENTIFIC AND PROFESSIONAL MEMBERSHIP
- (vi) Vice-president of Commission B1, "Thermodynamics and Transport Processes" of the International Institute of Refrigeration;
 - (v) Member of CTR (Technical Committee for Refrigeration) of AICARR (Associazione Italiana del Condizionamento dell'Aria, del Riscaldamento e della Refrigerazione).
 - (iv) Member of the Italian Chapter of ISES, International Solar Energy Society;

- (iii) Member of ATI (Associazione Termotecnica Italiana);
- (ii) Member of UIT (Unione Italiana di Termofluidodinamica);
- (i) Member of AIPT (Associazione Italiana di proprietà termofisiche)

VISITING
FELLOWSHIPS

- (ii) 1991-NATO-CNR "Senior Fellowship" at the Centre for Energy Research of the University of Ulster at Coleraine (Northern Ireland, UK) to study alternative refrigerants to CFCs.
- (i) 1997-CNR "Short Term Fellowship" at the Centre for Energy Research of the University of Ulster at Coleraine (Northern Ireland, UK) to study alternative refrigerants to CFCs.

RESEARCH ACTIVITIES

- (i) Refrigeration Systems and Heat Pumps
Simulation of steady state behaviour of vapor compression systems;
Experimental analysis of CFC's substitutes as working fluids in vapor compression refrigeration systems and heat pumps;
Comparison between mechanical and cryogenic methods for food freezing;
Innovation on food freezing with air-cycle refrigeration machines;
Small-scale plants for natural gas liquefaction (LNG).
- (ii) Thermophysical Properties of New Refrigerants
Experimental evaluation of thermodynamic properties of environmentally safe working fluids for refrigeration;
Prediction methods for transport properties (dynamic viscosity and thermal conductivity) of liquids along the liquid saturation curve.
- (iii) Energetics and Renewable energies
Study of condensing gas boilers;
Analysis of manufacture energy consumption for HVAC components;
Energy planning at regional level;
Solar Energy and Photovoltaic systems for highway tunnels lighting and for cooling and air conditioning applications;
Thermodynamic optimisation of biodiesel production processes;
Biodiesel from algae.

His research activities are documented in more than 140 papers, published on international and national journals and presented at international and national conferences.

He has been coordinator of several working groups involved in research projects funded by the European Union within the programmes JOULE, FLAIR and IEE, by the Italian Ministry of University and Research, by the Italian Ministry for the Environment and by the Marche Regional Governemnt