CV MASSIMO SANTARELLI (POLITO)

1. Picture

2. Personal data (age, diplomas, nationality, gender etc)

Massimo Gian Luca SANTARELLI, born in Aosta (Italy) the 24.07.1968.
Mechanical Engineer. Ph.D. in Thermodynamics and Heat Transfer
Associate Professor in Thermodynamics and Heat Transfer, Department of Energy, Politecnico di Torino

3. Research career (10-15 lines)

Author of around 110 papers in international journals and conferences.
The first years of activity were devoted to the topic of Thermo-economic Analysis and Optimization of energy systems, and in particular to the Environomics sector, in which the energy systems are studied from the thermodynamic, economic and environmental point of view.
Since 2000, the research activity is linked to the topic of fuel cell and hydrogen, and their integration with renewable sources:

- experimental activity and modelling on SOFC generator and Balance of Plant;
- experimental activity and modelling on PEMFC and DMFC single cells and stacks;
- experimental activity and modelling of high pressure electrolysis fed by renewable sources;
- modelling, analysis and optimization of energy systems based on integration of RES and H2.

Projects in the topic of hydrogen: European projects (ENFICA-FC), national projects (FISR 2005, PRIN 2005, EOS Project, Micro CHP Project, Celco Yacht Project, PFHC Project, MULTISS Project).
Experimental activity at the HySyLab laboratory (PEMFC and metal hydrides), EOS laboratory (CHP-100 and SFC-5 SOFC generators) and Centro Ricerche Edison (single SOFC tubular and planar).
Member of High-Quality Laboratory (LAQ) IN.TE.S.E. (Technology Innovation for Energy Sustainability) of Politecnico di Torino.
Member for Italy of ISO/TC 197 "Hydrogen Technologies".

4. Teaching experience (+ give the names of your present courses)

The teaching experience is on the wide topic of Applied Thermodynamics (Thermodynamics and Heat Transfer, Second Course on Thermodynamics), and in the specific topic of Fuel Cells (Hydrogen Technologies and Fuel Cells, Not-conventional Systems for the Production of Energy).
At present, my courses are: (a) Hydrogen Technologies and Fuel Cells; (b) Special Topics in Mechanical Engineering: Fuel cells (with University of Illinois at Chicago); (c) Second Course on Thermodynamics.

5. 5 recent key publications (last 5 years)

1. Santarelli M., Cabrera M., Calì M., Fuel Cells in Aeronautics: Analysis of SOFC Systems for More-Electric Aircrafts, *Journal of Aircraft*, Vol. 46 (1), pp. 269-284, 2009.
2. Marangio F., Santarelli M., Calì M., Theoretical model and experimental analysis of a high pressure PEM water electrolyser for hydrogen production, *International Journal of Hydrogen Energy*, Vol. 34, pp. 1143-1158, 2009.
3. Leone P., Santarelli M., Asinari P., Calì M., Borchiellini R., Experimental investigation of the microscopic features and polarization limiting factors of planar SOFCs with LSM and LSCF cathodes, *Journal of Power Sources*, Vol. 177, pp. 111-122, 2008.
4. Santarelli M.G., Leone P., Calì M., Orsello G., Experimental evaluation of the sensitivity to fuel utilization and air management on a 100 kW SOFC system, *Journal of Power Sources*, Vol. 171, pp. 155-168, 2007.
5. Santarelli M., Carbon exergy tax: a thermo-economic method to increase the efficient use of exergy resources, *Energy Policy*, Vol. 32, pp. 413-427, 2004.

6. Website reference (of research group)

http://www.swas.polito.it/rubrica/scheda_pers.asp?matricola=003570