ANNA STOPPATO

Anna Stoppato is an Assistant Professor of Fluid Machines at the University of Padova, Italy. Her main scientific field of the activity is the study and modeling of energy conversion plants: simulation of plants operation. Particularly, thermal plants, cogenerative and gas-steam combined plants, systems recovery energy from RSU and plants integrated with coal or biomass gasification have been analyzed; implementation of a modular code for energetic, exergetic and exergoeconomic analysis of energy conversion plants; development of exergetic-exergoeconomic techniques for plants; implementation of a multicriteria approach for the evaluation of energetic, economic and environmental performances of power plants; experimental study about the potentialities of biodiesel in boilers and internal combustion engines; development of techniques to evaluate the influence of power plant management strategies on its components residual life; life cycle assessment of electric production by photovoltaic panels.

TITLE OF THE SPEECH:
CONSIDERATIONS ABOUT THE SUSTAINABILITY OF PHOTOVOLTAIC ELECTRICITY GENERATION

The public opinion and the Institutions are particularly favourable to the use of solar energy, which seems to be completely clean and without any environmental impact.
While during the operation this technology can be considered almost absolutely clean, evaluating the production process of the panels is important in order to consider the emissions and the energy consumption during the whole panel life. For these reasons, only a deeper analysis, as a Life Cycle Assessment (LCA) can give a more correct basis to evaluate the real environmental sustainability of this kind of plants. It takes into account mass and energy flows over the whole production process starting form silica extraction to the final panel assembling. The operation of the panels can been analysed, in order to evaluate the annual electric production and so the Energy Pay Back Time (EPBT) and the Potential for CO2 Mitigation (PCM) for different geographic collocations of the photovoltaic plant with different values of solar radiation.