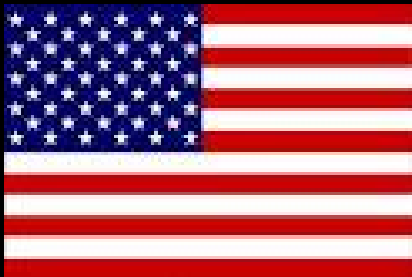


## *Bilateral Project Italy-USA "Hydrogen Transport through Nano-Structured Electrodes for Energy Application": Progress Report and Perspectives*

*University of Missouri, July 24 2013*

The Project is supported by the Italian Ministry of Foreign Affairs (MAE) within the frame of Significant Bilateral Projects (Joint Declaration following the 10th Review Conference on Scientific and Technological Cooperation between Italy and the United States of America for the years 2011-2013)



## The Project

The research project is oriented to improve the electrochemical processes involving hydrogen as energy vector (fuel cells and storage), by enhancing its transport and solubility.

The functional effects of specific materials characterized by a very high chemical activity and large mass transfer for hydrogen are studied.

The proposed approach is to develop properly shaped and structured layers of active metals to be nested on the electrodes, in order to optimize the effect of the surface morphology on the electrodes kinetics.

## Cooperative Frame

- The cooperation between ENEA and the US Institutions involved in the Project has been taking place for over than 16 years
- The cooperation with SRI was born in 1995-1996
- Joint research with NRL started in 2005
- The cooperation between ENEA and University of Missouri was officially activated by the MAE Project

The exchange of visits from the beginning of the Project up to now is quantified in more than 100 days by considering both Countries

## International Agreement

In 2010 an International Agreement was signed between ENEA and the Department of Defense of United States concerning the joint research with NRL on Hydrogen Metals Interactions.

The Agreement is covering the wide field of the material science research on metal – hydrogen systems, including also frontier research aspects.

## Remarks

The cooperation provides the proper conditions for improving the technological and scientific relations between the Countries.

*Thanks are due to the Ministry of Foreign Affairs of Italy*