ENI AWARD 2009

Debut in Research Prize

Winner

DEBUT IN RESEARCH PRIZE

Loredana De Rogatis

Design of Nanostructured Catalysts for H2 Production and CO2 Hydrogenation

Loredana De Rogatis graduated in Chemistry in 2004 from the University of Trieste, where she then obtained her PhD in 2008 from the Scuola di Dottorato di Ricerca in Nanotecnologie with a study on the development of nanostructural catalyzers for hydrogen production and CO2 hydrogenation under the supervision of Prof. Paolo Fornasiero (Chemical Science Department) and Dr. Erik Vesselli (University of Trieste Physics Department and TASC CNR-INFM National Laboratory).
Hydrogen is likely to become very important in the sustainable energy field because it is a key element in terms of energy conveying capacity such as for fuel cells in the automotive industry or as an intermediary in the conversion of renewable sources. Dr De Rogatis worked on her PhD research thesis within the *Materiali, Ambiente ed Energia* research group of the University of Trieste Chemical Science Department focusing through an innovative chemical approach on the development of a new kind of catalyzer for hydrogen production, both starting from methane and methanol-ethanol/water combinations. With the *Struttura e reattività di superfici* group from the Physics Department, part of the study was also on the CO2 hydrogenation reaction as a viable chemical way to exploit the molecule by converting it into useful products, and as a means to limit the greenhouse effect caused by carbon dioxide anthropic emissions.
The close working relationship with the *Struttura e reattività di superfici* group for both her bachelor's degree and PhD gave her the opportunity to gain experience and the ability to combine approach methods and analysis techniques which are used typically in two different disciplines: surface chemistry and physics.
She has already published 11 articles in international scientific magazines, written 3 chapters for scientific books and has spoken at several national and international conventions on her research activities.
Today Loredana De Rogatis is a research grantee at the University of Udine Science and Chemical Technology Department for the development of heterogeneous catalyzers to reduce indoor formaldehyde emissions.

Reasons for the choice

Dr. Loredana De Rogatis has developed a thesis entitled “Design of nanostructured catalysts for H_2 production and CO_2 hydrogenation”. Her work contributes with interesting results in the research on surface chemistry and catalytic behaviour of supported metal catalysts.