



Consiglio Nazionale delle Ricerche

**The contribution of the CNR to
the IT-SusChem Platform**

Launch of the IT-SusChem Platform

Aula Magna di Santa Lucia, Bologna 23 Ottobre, 2006



CNR Department “Molecular Design”

The CNR Department “Molecular design” drives and coordinates the research activity of 14 Institutes through the implementation and realization of projects aimed at supporting the Sustainable Development of the Country

Strong interaction with the Academy and Industry in a continuous effort to improve the competitiveness of the Country



DEPARTMENT “MOLECULAR DESIGN”

Istitutes of the Department

1. **ICCOM:** Istituto di Chimica dei Composti Organometallici
2. **ISTM:** Istituto di Scienze e Tecnologie Molecolari
3. **IMCB:** Istituto per i Materiali Compositi e Biomedici
4. **ICTP:** Istituto di Chimica e Tecnologia dei Polimeri
5. **ISOF:** Istituto per la Sintesi Organica e la Fotoreattività
6. **ISMAC:** Istituto per lo Studio delle Macromolecole
7. **ITM:** Istituto per la Tecnologia delle Membrane
8. **ICRM:** Istituto di Chimica del Riconoscimento Molecolare
9. **ICB:** Istituto di Chimica Biomolecolare
10. **ICIS:** Istituto di Chimica Inorganica e delle Superfici
11. **ISMN:** Istituto per lo Studio dei Materiali Nanostrutturati
12. **IC:** Istituto di Cristallografia
13. **IMC:** Istituto di Metodologie Chimiche
14. **IBB:** Istituto di Biostrutture e Bioimmagini



The research activity of the DPM comprehends 6 main strategic projects

- 1. Molecular design of biochemical properties**
- 2. Molecular design of macromolecules**
- 3. Nanostructured systems with catalytic properties**
- 4. Nano-organized systems with electrical and photonic properties**
- 5. Functionalization of films and interfaces**
- 6. Enabling technologies of drug discovery**



5 priorities in the IAP 2006 of interest to the CNR

- 1) Bio-based economy:** Improvement of biorefinery technologies. The biorefinery concept
- 2) Materials:** Synthesis and processing
- 3) Sustainable product and process design:**
Biomass based feedstocks;
New synthetic pathways;
Implementation and integration of intensified process technologies



Sustainable chemistry: Activity in progress

“Inter-departmental project “Sustainable Chemistry”

Based on the elaboration of a limited number of projects with well defined deliverables

Actors: CNR & Federchimica

Other Stakeholders:

Istituto Superiore della Sanità, CRUI, ONGs, Finance OG



Sustainable Chemistry: Activity in progress

Network di Excellence IDECAT

Integrated Design of Catalytic Nanomaterials for a Sustainable Production

VI° PQ European Community

Kick off 1 Aprile 2006, duration 5 anni



WP5 Creating and mastering nano-objects and nano-organisation

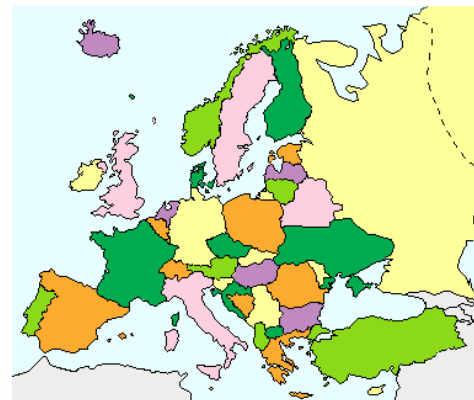
WP6 Creating and designing new multifunctional molecular, enzymatic and supported catalysts structured on the nanoscale

WP7 Bridging the gap in multi-disciplinary approaches

WP8 Eco-processes and sustainable energy and production

Contractors

Consorzio Interuniversitario per la Scienza e Tecnologia dei Materiali (INSTM)	Italy
Ghent University	Belgium
Katholieke University Leuven	Belgium
J. Heyrovsky Inst. of Physical Chemistry	Czech Rep.
Helsinki University of Technology	Finland
Centre Nat. de la Recherche Scientifique	France
Max-Planck-Gesellschaft	Germany
Leibniz Institute for Organic Catalysis	Germany
Technische University München	Germany
Consiglio Nazionale delle Ricerche	Italy
NRSC-Catalysis	The Netherlands
Institute of Catalysis and Surface Chemistry	Poland
Consejo Sup. de Investigaciones Cientificas	Spain
Stockholm University	Sweden
University St. Andrews	U.K.
University of Southampton	U.K.
Ecole Polytechnique Féd. de Lausanne	Switzerland



ERIC

European Research Institute on Catalysis

VI° PQ European Community

Inizio 2007





Sustainable Chemistry: Activity in progress



COST Chemistry Action D29 Working Group 0009/03
"Green Chemistry through Aqueous
Organometallic Catalysis" (2003 – 2007)

COST D24 Chemistry Action

*Sustainable Chemical
Processes: Stereoselective Transition
Metal-Catalysed Reaction*

MARIE CURIE RESEARCH TRAINING NETWORK

project MRTN-CT-2003-503864,

**"Transition Metal Chemistry and Catalysis
in Aqueous Media" (AQUACHEM)**

(2003 – 2007) (6th RFP)





Sustainable Chemistry: Activity in progress

Organization and management of symposia and workshops on Sustainable Chemistry:



ISHHC

"International Symposium on the relationships between homogeneous and heterogeneous catalysis" 2005 - 2007



IDECAT Conference Series

"Catalysis for sustainable Energy production" 2006



ISHC

"International Symposium on homogeneous catalysis" 2008



Sustainable Chemistry: Activity in progress

The project Firenze Hydrolab

H-STORAGE & PRODUCTION

**Stakeholders:
CNR, University of Florence,
LENS**

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HYDROLAB

