



Preface

Special issue dedicated to APAC 2010

This special issue of Catalysis Today contains a series of papers presented at the 2nd International Symposium on “Air Pollution Abatement Catalysis” (APAC 2011), held in Cracow (8–11 September 2011), within the framework of the International Group of Research (or “GDRI”) entitled “Catalysis for Environment, Depollution, Renewable Energy and Clean Fuels”, performed from 2007 to 2011. This “GDRI” was resulting from a strong initial interaction between French and Polish research groups and created by PAN (Polish Academy of Sciences) and CNRS (Centre National de Recherche Scientifique, in France). Other laboratories from Europe (Spain, Portugal, Italy) and from Brazil and Vietnam were involved in this GDRI Program.

The network of Laboratories was also supported, besides CNRS and PAN, by the Polish Ministry of Scientific Research and Education, and by the French Embassy in Warsaw.

The Program has been sponsored too, for three years, by the French GDFSUEZ Company.

More particularly, the financial help from all previous institutions was essential for the organization of the 2nd International Symposium APAC 2010. Local organizers of the Symposium were from the Centre of Polymer and Carbon Materials of Polish Academy of Sciences, in Zabrze, and the Faculty of Energy and Fuels, AGH University of Science and Technology, in Cracow, the latter housing the Symposium. The Scientific Committee of the APAC 2010 Symposium invited the research community to participate and discuss the topics relevant to the actual concepts and models of the catalysis involved in:

1. Mobile sources emissions.

NO_x treatment (NO_x trap, NH₃ SCR, HC SCR, H₂ SCR) and Particulate Matter abatement from classical or renewable fuels was the main topics of this session. Other subjects such as the catalysis for on-board ammonia production or urea decomposition have been developed. (Session 1)

2. Stationary sources emissions for (air and water treatment).

Abatement of atmospheric pollution by catalytic decomposition of N₂O at high temperatures (nitric acid plants) and its catalytic reduction at medium temperatures was the main subjects of this session. Catalytic NO reduction or decomposition in flue gases (coal, natural gas) and VOC treatment was also of interest. Additionally, wet catalytic oxidation of pollutants or photocatalysis have been considered. (Session 2)

3. Clean Fuels and Renewable Energy.

The focus of this session was catalytic coal and biomass gasification and valorization to cleaner fuels. Thus, syngas and fuels production were the main subjects to be discussed. Processes

such as reforming (oxy, dry, steam), partial methane oxidation (POM), chemical looping combustion (CLC), chemical looping reforming (CLR), water gas shift (WGS) and Fischer-Tropsch reactions have also been considered at the both global and molecular level. (Session 3)

Special attention was paid to the *design* of catalysts based on *new concepts and models* and on *modeling and simulation* of materials and reactions.

The mainstream of the Symposium was 42 oral presentations and 139 posters, covering all these subjects. The 175 participants from different countries (24) made the success of this event.

Internationally renowned researchers were invited to give an overview of various important areas:

- Pio Forzatti (Italy)
Catalytic lean NO_x removal in vehicles
- Franck Delacroix (ADEME, France)
Air pollution. The technical and regulatory framework concerning stationary sources
- Gérard DjégaMariadassou (Poland)
From methane total oxidation to Syngas: Molecular approach of Combustion, Reforming, WGS, POM, Chemical Looping
- Jae Soon Choi (USA)
Factors affecting the NH₃ selectivity of lean NO_x traps
- Stefania Specchia (Italy)
Hydrocarbons valorization to cleaner fuels: H₂-rich gas production via fuel processors
- Jean-Michel Trichard (Renault SA, France)
Current tasks and challenges for exhaust after-treatment systems ageing (DPF, LNT, SCR-NH₃, etc.) in interaction with fuels and lubricants
- Pier Ugo Foscolo (Italy)
Hot gas cleaning and conditioning coupled with biomass gasification
- Javier Pérez Ramírez (Switzerland)
Control of N₂O emissions in industry-Catalysts and processes
- Boris Shelimov (Russia)
Photocatalytic purification of indoor air from nitrogen oxide contaminants on modified TiO₂-based catalysts

The organizers hope that this conference will promote further discussion on the important issues of Catalysis for Environmental Protection and Clean Fuels and Renewable Energies and lead to closer cooperation of researchers interested in this field. Special thanks are due to Dr. Monika Motak and Dr. Christophe Dujardin

as well as Mrs. J. Thil (Symposium Secretary) for the excellent co-organisation of the Symposium.

Patrick Da Costa*
*Université Pierre et Marie Curie, Institut Jean Le Rond
d'Alembert, France*

Teresa Grzybek
*Faculty of Energy and Fuels, AGH University of
Science and Technology, Cracow, Poland*

Andrzej Krzton
*Centre of Polymer and Carbon Materials of Polish
Academy of Sciences, Zabrze, Poland*

* Corresponding author.
E-mail address: patrick.da.costa@upmc.fr
(P. Da Costa)

Available online 11 August 2011