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International Symposium on Air & Water Pollution Abatement Catalysis (AWPAC)–Catalytic pollution control for stationary and mobile sources

Foreword



Environmental challenges continuously stimulate the development of innovative solutions amongst academic and industrial researchers. More particularly, these last years, heterogeneous catalysis has been widely dedicated to energy saving, energy valorization, and pollution control.

These two thematic issues of *Comptes rendus Chimie* contain a series of papers presented at the International symposium on “Air and water pollution abatement catalysis” (AWPAC 2014), held in Cracow (1st–5th September 2014), within the framework of the International group of research (or “GDRI”) “Catalysis for environment, depollution, renewable energy and clean fuels”. This “GDRI”, which has been active from 2007 to 2014, resulted from a strong initial interaction between French and Polish research groups and was created by the “Centre national de la recherche scientifique” (CNRS, France) and the Polish Academy of Sciences (PAN). Other laboratories from Europe (Spain, Portugal, Italy, Germany, etc.) and from Brazil and Vietnam were involved in this GDRI Program. This 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. More particularly, the financial help from all previous institutions was essential to the organization of this event.

Local organizers of the symposium were from the Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, in Cracow, and the Faculty of Energy and Fuels, AGH University of Science and Technology, in Cracow, the latter housing the symposium.

Members of the scientific committee of the AWPAC 2014 symposium focused on discussions relevant to the actual concepts and models related to catalysis applications involved in the following topics:

- *Mobile sources emissions*

NO_x treatment (NO_x trap, NH₃ SCR, HC SCR, H₂ SCR) and particulate matter abatement from classical or

renewable fuels were the main topics of this session. Other subjects such as catalysis for on-board ammonia production or urea decomposition, have been developed (Session 1).

- *Emissions from stationary sources (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 were the main subjects of this session. Catalytic NO reduction or decomposition in flue gases (coal, natural gas) and VOC treatment were also of interest. Additionally, the wet catalytic oxidation of pollutants or photocatalysis has been considered (Session 2).

- *Clean fuels and renewable energy*

The focus of this session was catalytic coal and biomass gasification and valorization to cleaner fuels. Thus, syngas and fuel 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 global and the molecular levels (Session 3).

These topics are representative of the two volumes of these issues.

The AWPAC program contained 44 oral presentations and almost 140 poster communications covering all these subjects. The 135 participants from different countries (20) made the success of this event.

The organizers hope that this conference will promote further discussions on the important issues of Catalysis for environmental protection and clean fuels and renewable energies, and lead to closer cooperation between researchers interested in this field. Special thanks are due to Ms. Évelyne Mignon (d'Alembert Institute) for managing the logistics for foreign partners and French participants. We also would thank the dean of the faculty of energy and

fuels, Prof. Wojciech Suwała, and Dr. Monika Motak, from AGH University, our hosts, and all the persons from both the Jerzy Haber Institute of Catalysis and Surface Chemistry and the Polish Academy of Sciences in Cracow, as well as the members of AGH university of science and technology for the excellent co-organization of the symposium.

Finally, we would like to conclude in acknowledging Prof. Gérard Djéga-Mariadassou, retired from 'Université Pierre-et-Marie-Curie' (France).

On behalf of all the participants in this GDRI, we would like to pay tribute to Dr. Andrzej Krzton from the Centre of

Polymer and Carbon Materials of the Polish Academy of Sciences in Zabrze (Poland), who initiated this international network with Prof. Gérard Djéga-Mariadassou, and without whom this conference would not have been held.

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