Interview with Jürgen Caro
Leibniz University of Hannover. Germany

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Leibniz University of Hannover.

Can you give us some background information about your education and current research?

From my education, I am an East-German, who went to school and studied chemistry in the former DDR. From my feelings now, I am an European. But let me tell this story step by step.

The discrepancy between an ambitious and really good education on one side and no mental and travel freedom which was de facto an imprisonment on the other side – this was the misery of the former East Germany. Whereas the school education especially in mathematics, chemistry and physics was excellent, the suppression of freedom and democracy did not match with the high aims in education. The young generation was frustrated, who could manage it, left the country.

After our peaceful revolution in 1989 I organized several new research groups and institutes. European industry and the Federal Ministry of Science, Education and Research of Germany offered generous financial support – if we were willing to direct our research on the societal hot topics of Europe and Germany: Materials for energy transformation, storage and transport such as catalysis, energy efficient membrane separation, fuel cells, solar cells. Also green and environmental chemistry, materials for information storage and transport, surface coatings, nano-materials. This type of application-oriented practice-relevant research was born in the years after German re-unification, and it helps me a lot in my co-operation in numerous European projects in the 6th and 7th Framework Programs.

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What made you opt for a scientific career? How would you define your job?

I like my job as university professor, I enjoy the interplay of teaching and research. But I am not sure that chemist would have been the only successful career for me. I can also imagine to work as a medical doctor or scientific director of a producing company. All these jobs require an interplay of a natural scientific education with technical skills and the work with people.

What is the added-value of an EU project such as CARENA compared with other partnerships on the same topic you may be involved in?

European projects are per se interdisciplinary and multi-cultural, people with different backgrounds come together. I have profited from the co-operation in the different European projects not only scientifically, the work together has opened my mind and in a general way.
Usually the national media of a country (TV, radio, press), report about other European countries through a "National glass". After direct discussion with colleagues from these European countries, I have developed in many cases a deeper and different understanding for the problems and wishes of my European colleagues – which is slightly different.

What do you think is the most satisfying part of this project?

Satisfaction and frustration will be very near. I enjoy to meet and to discuss membrane research in the big team of academia and industry. The success of CARENA will be of high importance for the industrial implementation of membrane technology.

And the most frustrating part?

We are in the middle of CARENA. Frustrations will come – hopefully not - by the end of the project if major goals cannot be reached. And it cannot be foreseen that this happens. Let us be therefore busy and optimistic, that CARENA reaches the project aims.

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Breck Award of the International Zeolite Association.

You have obtained together with Prof. Michael Tsapatsis from the University of Minnesota, USA the Breck Award of the International Zeolite Association on the Moscow International Zeolite Conference in July 2013 for your pioneering work on novel molecular sieve membranes. Congratulations !
Could you give us more details, your feelings?

It is as always a mixed feeling. It is of course a great honor to have got this prestigious Breck Award together with M. Tsapatsis for the most important research on nanoporous materials during the last 3 years. And I have to note that also a great deal of CARENA research has contributed to the results. But there are also other scientists with outstanding results which would have deserved the Breck Award: Yaghi, Kitagawa or Ferey with metal-organic frameworks e.g. When you get such award, your inner voice asks the question: Are you at the end of your scientific career, so that people give you an award for your "life performance" as a good-by present from active research? I hope not, I am healthy and ambitious, I regard the Breck Award as a catalyst for new activities. By, the way, in addition to the Breck Award, I have got in 2013 the Ostwald Medal .

From the left: A. Corma, Chairman of the Breck Award Committee, University Valencia, Spain, J. Caro, Leibniz University Hannover, Germany, M. Tsapatsis, University of Minnesota, USA, and G. Belussi, President of the International Zeolite Association, ENI Research, Italy.

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Leibniz University opened in 1831, with 64 students. Today there are around 21 000 students following courses in natural sciences and engineering, the humanities and social sciences as well as in law and economics.

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Institute involved in CARENA:
Institute of Physical Chemistry and Electrochemistry, which focuses on solid state chemistry. Special attention is devoted to porous materials for catalysis, gas adsorption and membrane permeation. Specific applications are catalytic membrane reactors, gas separation by molecular sieve membranes, Grätzel-type dye-sensitized solar cells, proton conducting membranes for fuel cells. Relevant to the CARENA project is the long experience in developing zeolite membranes and zeolite molecular sieve membranes.

Thank you for answering my questions, and all the best for CARENA and the other projects you are involved in.

CARENA in brief
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