



Editorial

Comments on the seventh international symposium “Effects of surface heterogeneity in adsorption and catalysis on solids”

ISSHAC-7



Poland, Kazimierz Dolny, 5–11 July 2009

There is something very particular and unique about the ISSHAC conference. And, I have an impression that most of the participants think in the same way. When the first time I heard about the conference some years ago, it was during another interesting meeting but everybody was talking about ISSHAC. One could feel that all of them wanted to go there because it was different and appealing at the same time. When I said that I was not going there was a strange look, as if they did not believe me. Now I know why. Now I do the same to anybody who says that he/she is not going. And I do not even try to explain why one needs to go to understand the very special atmosphere of ISSHAC and then he or she will learn why the participants are coming back and wait for the next one.

Dr. Bogdan Kuchta, Université de Provence Laboratoire Chimie Provence Centre de Saint-Jérôme 13397 MARSEILLE Cedex 20, FRANCE

I attended my first ISSHAC meeting in Zakopane in August 2006. The conference was recommended to me by a colleague from industry, who used to work with R&D in adsorptive separation processes. I was initially impressed by the format of the conference, which intensely fostered interaction and sharing of experiences by allowing a considerable amount of time in the program for social/cultural activities. The other aspect that motivated me very positively was the chance to get in touch with researchers from Eastern Europe, whom I did not regularly meet at other conferences on Adsorption and Catalysis worldwide. But mostly, I was captured by the chance to witness and participate in

fruitful discussions between experimentalists and theoreticians giving valuable feedback from their own background and experience to others. Since this first occasion, I have realized that tight bonds had tied most participants, both in the professional and personal points of view, almost like a big intercultural family. Personally, this first experience gave me the chance to come closer to the physicists of UNSL (Argentina), being a Chemical Engineer myself, and this collaboration has progressed to a formal status in the next years. We are publishing a joint work in this special issue. In ISSHAC-7, held in Kazimierz Dolny, I did feel like coming back home to meet cherished relatives and beloved friends. I was happy to see that other Ibero-American colleagues, to whom I had “advertised” this symposium, also joined the meeting in 2009 and seemed to enjoy it as much as I did. Most of all, I learned to admire the spirit of Polish people that subtly and gently diffuses throughout the meeting: “hard-workingness” and scientific rigor allied to extreme politeness and joy of living. All of these qualities are obviously incarnated by restless Wladek Rudzinski, the idealizer of the ISSHAC symposia, whom I take the chance to congratulate on the admirable work.

Prof. Diana Cristina Silva de Azevedo, GPSA—Grupo de Pesquisa em Separações por Adsorção, DEQ/Universidade Federal do Ceará, Campus do Pici, bl. 709, 60455-760 Fortaleza, CE, BRASIL

There are several important tendencies in the development of material (applied, technological) and theoretical (fundamental) science in chemistry and physics which were reflected in the ISSHAC-7 program. The first one is the development of well structured nanomaterials of different origins such as ordered metal nanooxides, carbon nanotubes and nanoparticles, porous polymers with ordered structures, hybrid nanocomposites with controlled phase distributions, functionalized materials with ordered surface or supramolecular structures, etc. with controlled structural, adsorptive, reactive, catalytic or other characteristics. Notice that the surface and volume heterogeneity of these nanomaterials play a very important role in their applications since their characteristics should be very exactly adjusted at a nanolevel to achieve maximum efficiency of, e.g., catalysts used in fine organic synthesis, high-selective and effective adsorbents, drug components of novel generations, and other materials related to nanoscience and nanotechnology. Notice that the terminology and the nomenclature in this science are not yet completely established; therefore worldwide symposia similar to the ISSHAC help to establish them and reduce certain terminological confusion observed in the literature.

The second main part of the symposium was devoted to fundamental, theoretical, and modelling aspects, which, however, to a large degree deal with the problems very closely related to the first direction based on experimental nanoscience (nanotechnology). As a whole, it is difficult or even impossible to separate these two directions because deeper insight into the problems of nanoscience and nanotechnology needs both fine experimental and theoretical bases and only on these two “elephants” (here the third “elephant” is the control of interfacial phenomena), it is possible to achieve impressive and important new results. The development of adequate theoretical models is a very important task for nanoscience and its importance strongly grows on transition from micro- to nanoobjects since the costs of model errors become higher and higher for smaller and smaller objects. Several reports at the symposium were devoted to developments of new and more adequate models of carbon and oxide materials. The use of these models in analysis of experimental data can provide much deeper insight into the problems of design of developed novel nanomaterials. Therefore, it is very important that experimentalists and theoreticians from many branches of chemistry, chemistry and physics of surface, catalysis, adsorption,

etc. could meet and exchange ideas and new results. A mixture of experimental and theoretical presentations at joint sessions (of course, with general but not narrow presentations) could give more effective exchange of ideas and results.

Recurring to the third “elephant” at the symposia, notice that this is a very complex field due to a very large variety of interfacial phenomena, where the surface heterogeneity effects play many roles there. The interlacement of experiment and theory in this field is the tightest, since it is difficult to imagine nanocatalysis and organic synthesis without carrying on quantum chemical modelling, reaction kinetics without accompanying theoretical calculations of rate constants, etc. There were many international presentations from Poland–USA, Poland–Ukraine, Poland–USA–Ukraine, Poland–France, Poland–France–USA, Poland–UK, Poland–UK–Spain, Poland–UK–Australia, Poland–Mexico, Austria–Poland–Germany, Spain–Brazil, Spain–Belgium, Spain–France, Spain–UK, Spain–Portugal, France–Greece, France–USA, France–South Korea, Greece–Germany, Greece–France–Germany, Greece–Norway, Germany–Canada–Croatia–France, Ukraine–Italy, USA–Germany, USA–France, USA–P.R. China, P.R. China–Sweden, and Brazil–Argentina. This reflects the general tendency of science to become more and more international.

Prof. V.M. Gun'ko, Head of Department, Chuiko Institute of Surface

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ISSHAC-7 in Kazimierz Dolny was one of the conferences attended by my group members in 2009 but I am sure it was the best. As previously, the scientific quality of ISSHAC was very high with nice lectures and full of discussions, oral and poster sessions. The major topics of this symposium were: Synthesis and Sorption Properties of Sorbents, Fundamental Problems and Theoretical Approaches, Surface Heterogeneity Effects in Catalytic Reactions, Fundamental Problems of Adsorption in Systems with Confined Geometry, Fundamental Problems of Adsorption at Solid/Solution Interfaces, Characterization of Surface Heterogeneity, Experimental methods and Theoretical Approaches, Experimental and Theoretical Studies of Sorption Kinetics, Experimental Studies and Their Theoretical Interpretation. As it can be seen, everybody working on theory as well as on experimental aspects of adsorption and catalysis could find many interesting presentations.

This conference is also very important because the attention of Prof. Wladek Rudziński (as he repeated many times) is focused on creating the right atmosphere for exchanging ideas, so that one can discuss with colleagues interested in fundamental and practical aspects of adsorption the role of heterogeneity in adsorption and catalysis. Following old saying that “A single conversation with a wise man is better than ten years of study” we spent a lot of time discussing, with our friends from Poland as well as from abroad fundamentals of molecular simulations and other adsorption problems. Social events were organized every evening where one had additional possibility for exchanging ideas in a very pleasant atmosphere. This year the participants had opportunity to admire (during two guided excursions) the historical part of the city of Lublin and Kazimierz, and watch live music concerts of the famous folk ensemble of Maria Curie-Skłodowska University and of Polish Klezmer band “Lubliner Klezmerim”. There were fantastic social events, banquets with free bar, and the bonfire with grilled meat served. We were also boarded on a funny boat for a cruise along Vistula River, with a banquet on the board of the boat (see: http://www.chem.uni.torun.pl/~gaudip/wegiel/conferences/conferences_2009.html).

ISSHAC is probably the only one conference where organizing committee members take so much care of participants from the very beginning to the very end. Moreover, a special program is also organized for accompanying persons.

Summing up—Thank you very much (keep on trucking!), congratulations on nice conference, and we are looking forward to the next ISSAC-8 meeting.

Dr hab. Artur P. Terzyk, Professor of NCU, Nicolaus Copernicus University, Department of Chemistry, Physicochemistry of Carbon Materials Research Group, 7 Gagarin St., 87-100 Toruń, Poland

I am a native of Poland, so it's no surprise to anyone that a prospect of any trip to Poland is delightful to me. Attending the conference in Kazimierz Dolny was no exception. I could not pass up the invitation from the organizers of the ISSHAC-7 Symposium and miss the excellent opportunity to meet several friends not only from different corners of Poland but also from other countries; friends I met during my professional activities in the past but have not had the chance to talk to over the last decade or so. My participation in the ISSHAC-7 Symposium was the best decision I made in 2009. My "reunion" with the friends was pillared by the impressive scientific program and sweetened by the amazing accompanying entertainment program, both put together by passionate, hospitable and cheerful organizers. During our five-day long meeting, we took two guided tours, attended two concerts, had a boat tour, and enjoyed numerous social events and dinners. The weather cooperated with us most of the time, with the sun shining the way to the old part of Lublin, the beautiful historical city of Kazimierz Dolny with numerous art stores, and during our boat trip on the Vistula River. Walks along the colourful bank of the river provided a feeling of peace and contentment. And the quality of food served! Just for the taste of fresh Polish bread, eggs, ham, I would recommend this meeting to anyone. Paying a little over a thousand dollars for accommodation, food and entertainment was like paying for stones and receiving diamonds. I can only wish that Prof. Wladyslaw Rudzinski, Prof. Jolanta Narkiewicz-Michalek, and many of their colleagues from Poland, who helped to organize and coordinate the Symposium's program, will have sufficient energy for organizing the next international meeting on Effects of Surface Heterogeneity in Adsorption and Catalysis on Solids in the near future.

I pretty much knew what to expect from the scientific program before I decided to participate in the ISSHAC-7 Symposium. I have a strong interest in the characterization and use of heterogeneous materials, although my interests are not as great in the areas of adsorption and catalysis. I must say however that the participants positively surprised me with the extremely high level of interesting and important materials presented, the wide range of topics they covered, and the scholarly discussions that I had during and after the sessions. In my opinion, the meeting fulfilled the prime aim that I had before my trip to Poland, which was to learn new approaches in understanding the complex issues of heterogeneous surfaces as a necessary basis for the development of solutions in my projects. It was a truly multi-disciplinary meeting in that it explored a wide range of key issues and opened up for me new avenues of fascinating ideas. As a result, I expanded my thinking about characterization and colloidal properties of heterogeneous surfaces. Equally important, I made new professional friends studying other fields, people I would never have met if I had not attended this meeting. I came back from Kazimierz Dolny very refreshed, stimulated and motivated to further work, the outcome every participant and organizer dreams about before a meeting.

Jaroslaw Drelich, Associate Professor Michigan Technological University Department of Materials Science and Engineering 1400 Townsend Dr. Houghton, MI 49931, USA

The seventh international symposium "Effects of Surface Heterogeneity in Adsorption and Catalysis on Solids", ISSHAC-7, which was held in the beautiful town of Kazimierz Dolny, proved to

be an excellent meeting, comprising a high quality scientific program and a rich social and cultural program. It is fair to say that the scientific program covered an impressively broad range of topics related to adsorption and catalysis, aiming to address a variety of interfacial problems: from energy and gas storage, environmental clean-up and material properties to drug delivery, sensors, optoelectronic and atmospheric interfacial chemistry.

There was a good balance between the experimental and theoretical presentations, some of them highlighting novel nanomaterials and experimental methodologies, and new concepts for theoretical description of adsorption. It was a stimulating conference allowing plenty of time for informal discussions and exchange of ideas.

It should also be noted that the active participants came from some twenty-eight countries in the world, making this symposium a truly international one, and thus revealing its increasingly high reputation among the scientists all over the world. It was a real pleasure for me to attend this symposium for the first time, and I met some high calibre scientists, from whom I have benefited considerably.

It is a symposium that I would certainly recommend to anyone working in surface science, applied catalysis or material science, whose interests fall between fundamental aspects and real life applications. Finally I would like to sincerely thank Professor Wladek Rudzinski and his colleagues for an impeccable effort in organizing the symposium, which was undoubtedly successful.

Dr. Vittorio Fiorin, Department of Chemistry, University of Cambridge, Lensfield Road CB2 1EW, Cambridge, United Kingdom

Dear Wladek,

Thank you very much for your message attached below. As I pointed out in my previous mail to you I was very pleased to attend ISSHAC-7 this summer. Because I faithfully attended all talks presented in Room B, I can say that the overall quality of the presentations was very good. There were only very few low points (but these were extremely low in my opinion!). Thus, the quality of both speakers and scientific program was at a high international level and there were many presentations that were quite interesting and stimulating for my own scientific projects back here in Berlin.

(...)

Therefore, let me sum up by saying that ISSHAC-7 was one of the best, most stimulating, and interesting international meetings I attended in quite some time. The organization was absolutely professional and this created a relaxing atmosphere that I am sure everybody enjoyed. I only hope that you and your colleagues are willing to do "it" again in the future. There is no doubt that I will attend ISSHAC-8 if my other obligations permit. You should consider ISSHAC-7 your personal achievement and I am sure everybody attending appreciated your efforts. With my best regards, Martin

Professor Martin Schoen, Stranski-Lab. of Theor. und Phys. Chemie, Technische Universität Berlin 10623, Berlin, Germany

Dear Wladek,

I would like to thank you, Jolanta and all your colleagues as well as students in Poland for organising and hosting the wonderful ISSHAC-7 Symposium in Kazimierz Dolny. The experience of attending ISSHAC symposia remains unique. Scientifically the ISSHAC symposia provide an important and high-profile forum for the most up-to-date developments in heterogeneous adsorbents and catalysts, which cover the full range of topics from fundamentals to applications. The highlights for me at ISSHAC-7 were the presentations on deformable adsorbents and hydrogen storage. In addition, the ISSHAC symposia provide the time and

space to discuss these developments, and what's more, with colleagues. This is a distinctive and welcome feature of ISSHAC compared with many other modern conferences which often have limited opportunities for discussion. Also, Hannah (who accompanied me in Kasimierz) and I have made many friends from all over the world at the ISSHAC symposia plus we have enjoyed the rich culture and history of Poland. I think these aspects are essential ingredients of the ISSHAC style. Thank you again Wladek and everyone associated with ISSHAC-7. I am already looking forward to ISSHAC-8. With very best wishes Tim

Dr T J Mays, Department of Chemical Engineering, University of Bath, BATH BA2 7AY, UK

Based on my feeling by attending this symposium, the ISSHAC is not only the abbreviation of "International Symposium on Surface Heterogeneity Effects in Adsorption and Catalysis on Solids", but also is the abbreviation of:

Interesting symposium with adequate load of scientific, social and cultural events.

Scientific exchange of new findings in adsorption and catalysis on solids.

Specific symposium for understanding the effects of heterogeneity of solid surfaces.

High quality oral and poster presentations about adsorption and catalysis.

A bridge to connect the theoretical and experimental findings of adsorption and also catalysis.

Complete and wonderfully organized symposium by Wladek Rudzinski and his co-workers.

Dr. Saeid Azizian, Department of Physical Chemistry, Faculty of Chemistry, Bu-Ali Sina University, Hamedan, Iran

After ISSHAC-1 in Kazimierz the other symposia held were: ISSHAC-2 in Zakopane and Lewocza on the Slovakian side of the Tatra Mountains (1995), ISSHAC-3 in Toruń (1998), ISSHAC-4 in Cracow (2001), ISSHAC-5 in Gdańsk (2004) and ISSHAC-6 in Zakopane (2006).

With each next symposium organized in another region of Poland, its prestige and scientific rank were growing. It has become a forum of presentation of the latest experimental research results and theoretical approaches as well as intensive exchange of ideas and opinions about adsorption and catalysis on solids.

This year the symposium ISSHAC has been held in the city where the first one was held. On 5–11 July the specialists in surface physicochemistry from almost all corners of the world met in Kazimierz Dolny and Lublin. The organizers of the seventh

symposium were as usual: Faculty of Chemistry Maria Curie-Skłodowska University, Polish Chemical Society as well as Institute of Catalysis and Surface Physicochemistry, Polish Academy of Science, Cracow.

This year symposium ISSHAC-7 was attended by 144 active participants and 27 accompanying persons. Besides the participants from Poland, the conference was attended by the researchers from almost all continents: Europe, North America, South America and Asia—totally from 26 countries: Germany, Spain, France, Italy, Hungary, Croatia, England, Greece, Romania, Portugal, Russia, Ukraine, the Czech Republic, the USA, Argentina, Mexico, Columbia, Brazil, Israel, Turkey, Iran, Saudi Arabia, Japan, China and Thailand.

Many of them participated in the previous symposia. However, a numerous group were those who took part in this symposium for the first time.

One of important events taking place during the opening ceremony was delivering to Mieczysław Jaroniec, the Honorary Professor of MCS University (also participant of all ISSHAC symposia) the special issue of the journal ADSORPTION dedicated to him on the occasion of his sixtieth birthday.

This year symposium boasted with 71 lectures delivered, 3 poster sessions organized, where 107 posters were demonstrated and wide spectrum of problems being discussed.

The firms producing scientific apparatus and laboratory equipment: Quantachrome (USA) and Micromeritics (USA) SYL&ANT Instruments and POROTEC GmbH (Germany) displayed their products.

For more information, please visit the website of our ISSHAC-7 Symposium—<http://isshac.org>.

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