

Preface

The 2010 ARW “Carbon Nanomaterials in Clean-Energy Hydrogen Systems” (CNCEHS’2010) was held in June 24–30, 2010 in the remarkable city of Yalta (Crimea, Ukraine) known for its heroic and unusual history. In the tradition of the earlier conferences, CNCEHS’2010 meeting served as a multidisciplinary conference for the presentation and discussion of the most recent research on transition to hydrogen-based energy systems, technologies for hydrogen production, storage, utilization, carbon nanomaterials processing and chemical behavior, energy and environmental problems. The aim of CNCEHS’2010 was to provide the wide overview of the latest scientific results on basic research and technological applications of hydrogen interactions with carbon materials. As well-known, energy shortage and environmental pollution is the major problem in the current world, energy-saving characteristics of hydrogen occupies an important position in the development of new energy, because the energy is a basic and necessary component in the development of the communities. The active delegates from different universities, research/academic organizations and governmental agencies could meet, discuss and present the most recent advances in hydrogen concepts, processes and systems, to evaluate current progress and to exchange academic information, to identify research needs and future developments in this important area. This ARW should help further the progress of hydrogen-based sciences and promote the use of hydrogen and carbon nanomaterials as essential to make the Hydrogen Economy a reality.

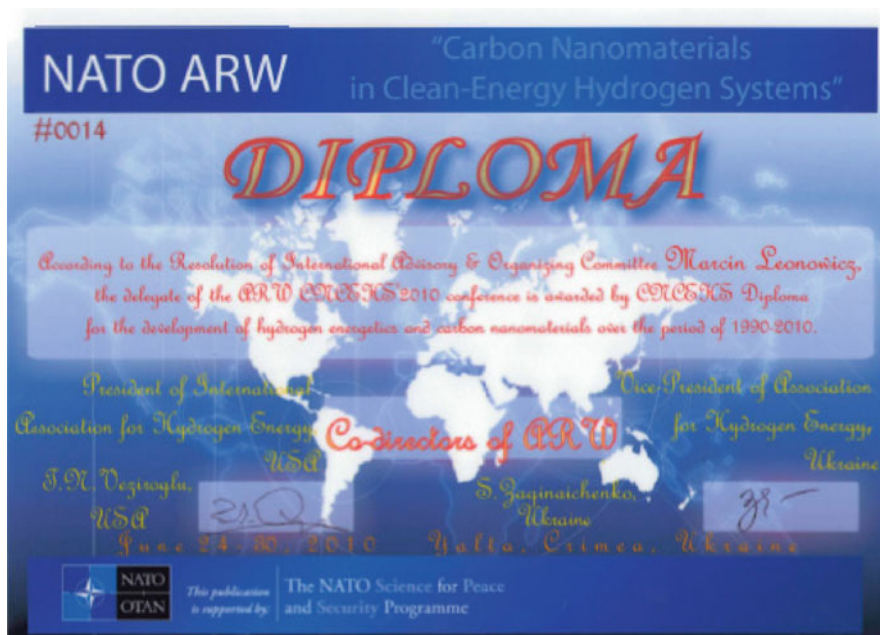
According to the resolution of the International Advisory and Organizing Committee, it has been established the awards “Oscars of Hydrogen Energy” for scientists who have made major contributions to the promotion of hydrogen energy worldwide. The world-famous scientist Prof. T. Nejat Veziroglu, who is the author of a great number of books and papers, the President of the International Association for Hydrogen Energy (IAHE), the Founding Director of Clean Energy Research Institute of the University of Miami, USA, and the Founding Editor-in-Chief of the International Journal of Hydrogen Energy was the first recipient of the Award “Oscar of Hydrogen Energy”. Beycan Ibrahimoglu, the Director of



Dr. Dmitry V. Schur, chair of Organizing Committee of CNCENS'2010 and Prof. Beycan İbrahimoglu, Director of Plasmachemical Center in Ankara, Turkey, presented the first award "Oscar of Hydrogen Energy" to Prof. T. Nejat Veziroglu, the President of the International Association for Hydrogen Energy

Plasmachemical Center in Ankara, Turkey, was a producer of the "Oscar of Hydrogen Energy" and will be the provider of such awards in the future.

Moreover according to the resolution of the International Advisory and Organizing Committee, a number of outstanding scientists who have considerable achievements in the field of carbon nanostructures and hydrogen energy have been rewarded with diplomas of NATO ARW "Carbon Nanomaterials in Clean-Energy Hydrogen Systems". Among them were such world-wide well-known scientists as Prof. Nikolay Kartel (Institute of Surface Chemistry of National Academy of Sciences of Ukraine, Kiev, Ukraine), Prof. Nikola Koprinarov (Central Laboratory for Solar Energy and New Energy of Bulgarian Academy of Sciences, Sofia, Bulgaria), Prof. Marcin Leonowicz (Warsaw University of Technology, Poland), Prof. Vladimir I. Shapovalov and Prof. Raouf O. Loutfy (Materials & Electrochemical Research Corporation, Tucson, USA), Prof. Sergey S. Ivanchev (St.-Petersburg branch of Institute of Catalysis named after G.K. Boreskov of the Siberian Branch of the Russian Academy of Science, St.-Petersburg, Russia), Dr. Yuriy M. Shulga (Institute of Problems of Chemical Physics of Russian Academy of Sciences, Chernogolovka, Russia), Zhanna Mileeva (The University of Salford, United Kingdom), Nariman F. Javadov (Experimental-Industrial Plant of Institute for Petroleum Chemical Processes (IPCP) of the Azerbaijan National Academy of Sciences (NAS), Baku, Azerbaijan) and others.



Members of International Advisory & Organizing Committee Dr. Yuriy M. Shulga, Prof. Svetlana Yu. Zaginichenko, Prof. T. Nejat Veziroglu and Dr. Dmitry V. Schur, presented the NATO ARW diploma to Prof. Sergey S. Ivanchev, director of St.-Petersburg branch of Institute of Catalysis named after G.K. Borekov of the Siberian Branch of the Russian Academy of Sciences, St.-Petersburg, Russia.

Thus, this event has attracted international researchers as well as younger scientists to strengthen connections among scientists in the area of hydrogenated carbon nanomaterials research. The CNCEHS'2010 is a solid example of how NATO is promoting cooperation among scientists from developed countries of Europe, America and NATO Partner countries. Since fossil fuel resources are limited and harmful to the environment, more attentions have been paid on renewable energy recently. Therefore, conversion and utilization of renewable energy, such as hydrogen energy, became one of the most important topics of this conference since 1993 (1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007). One goal in organizing this conference was to prepare a discussion ambient for the related people and scientists working on renewable energy especially on hydrogen energy. We are planning to repeat the conference after 2 years. We hope these ARW and the one that are being planned for future will help the development of the technology on renewable and hydrogen energy.

The Proceedings of CNCEHS'2010 include some of the selected works presenting in the course of oral presentations, at the poster sessions, and during the round-table discussions at the conference in Yalta and representing the wide spectra of hydrogen energy and carbon nanomaterials related themes, but also latest progress in many key areas.

Finally, the organization of this conference was successful thanks to the support by the Scientific and Environmental Affairs Division of NATO as the NATO Science for Peace and Security Programme of the NATO Science Programme. Their contribution is gratefully acknowledged and the Organizing Committee and all ARW participants want to overflow with effusive thanks to NATO for the financial support of the CNCEHS'2010 ARW, and to **Mr. Jean Fournet**, Assistant Secretary General, Chairman of NATO Science Committee, and **Dr. Deniz Beten**, Section Head NATO Science for Peace Security, for the displayed mutual understanding and the comprehension of significance of problems under discussions at the CNCEHS'2010 ARW.

Svetlana Yu. Zaginaichenko
Dmitry V. Schur
Beycan İbrahimoglu
Valeriy V. Skorokhod
Ayfer Veziroglu

Carbon Nanomaterials in Clean Energy Hydrogen
Systems - II

Zaginaichenko, S.Y.; Schur, D.V.; Skorokhod, V.V.;

Veziroğlu, A.; İbrahimoglu, B. (Eds.)

2011, XXXIV, 540 p. 278 illus., Hardcover

ISBN: 978-94-007-0898-3