

## Report from Paris: Frontiers of Chemical Sciences (Malta-V)

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The fifth in the series of biennial conferences, *Frontiers of Chemical Sciences: Research and Education in the Middle East*, took place in Paris, France, December 4-9, 2011, at the headquarters of UNESCO as one of the culminating events of the International Year of Chemistry. More than 80 chemists and other scientists from 12 Middle Eastern countries (Bahrain, Egypt, Iraq, Israel, Jordan, Lebanon, Libya, Palestine, Qatar, Saudi Arabia, Syria, Turkey) and representatives from other nations (France, Germany, Norway, Switzerland, U.K., U.S.A.) met to hear plenary lectures, attend workshops on topics of regional importance, and participate in poster sessions at which the latest research and educational results were displayed. Unfortunately, the seven-person delegation from Iran could not attend because its members were unable to obtain visas to enter France.

Named for the site of the first “Malta” conference in 2003, subsequent conferences were held in Malta (2005), Istanbul, Turkey (2007), and Amman, Jordan (2009) to serve as one of the few opportunities that exist for the building of bridges through science diplomacy toward peace in the Middle East. The following organizations, in addition to the Malta Conferences Foundation (MCF), provided nominal or financial sponsorship of Malta-V: American Chemical Society, Royal Society of Chemistry, IUPAC, UNESCO, American Association for the Advancement of Science, New York Academy of Sciences, Civilian Research and Development Fund Global, Office of Naval Research Global, Munin Foundation (Norway), U.S. Army Forward Element Command-Atlantic, Organization for the Prohibition of Chemical Weapons, Terrific Science, UCLA Center for Global Mentoring, ACS Division of Chemistry and the Law, Palo Alto Church of Christ, Committee of Concerned Scientists.

Malta-V opened with welcoming remarks from Zafra Lerman (President, MCF), Irina Bokova (Director-General, UNESCO), Nicole Moreau (President, IUPAC), Ann Nalley (Vice President, MCF) for Bonnie Charpentier (Chair, ACS Board of Directors), Stanley Langer (MCF Board) for David Phillips (President, RSC), and Cindi Mentz (MCF Board) for Cathleen Campbell (President and CEO, CRDF). These were followed by a very stirring and sincere address by HRH Prince El Hassan bin Talal of Jordan, who emphasized the importance of scientific and educational cooperation among the nations of the Middle East in order to improve the human condition in the region.

The first plenary lecture was given by Omar Yaghi (University of California-Los Angeles; MCF Board) on *The Materials Beyond and its Development Through Global Mentoring* in which he described the growing of a vibrant global science community through the involvement of faculty and students at institutions and institutes throughout the world. The plenary lecture by Michael Grätzel (École Polytechnique Federale de Lausanne, Switzerland) on *Mesosopic Photosystems for Electricity and Fuel Production from Sunlight* examined the progress that is being made toward the utilization of solar energy as a substitute for energy from fossil and nuclear sources.

Subsequent plenary lectures were given by the following Nobel Laureates: Walter Kohn (U.S.A), *A Lecture on Solar Energy*; Claude Cohen-Tannoudji (France), *Measuring Time with Ultracold*

*Atoms*; Dudley Herschbach (U.S.A.), *The Impossible Takes a Little Longer*; Richard Ernst (Switzerland), *Western and Eastern Concepts of Physics and Metaphysics*; Jean-Marie Lehn (France), *Perspectives in Chemistry: From Supramolecular Chemistry towards Adaptive Chemistry*. Ada Yonath (Israel), who was scheduled to speak on *Research Horizons in the Middle East – A Personal Account*, could not attend due to illness.

The following workshops, which were chaired by leaders in the field and featured oral presentations by the Middle Eastern participants, provided the opportunity for the attendees to interact directly and professionally: *Sustainability of Resources, Energy, and Materials*, Tareq Abu Hamed (Israel), Mohammed El-Khateeb (Jordan); *Medicinal Chemistry and Natural Products*, Cathy Costello (U.S.A.), Nadia Kandile (Egypt), Masoud Mehrgardi (Iran; unable to attend); *Science Education at All Levels*, Georgene Herschbach (U.S.A.), Rachel Mamlok-Naaman (Israel), Hanna Hallak (Palestine); *Environment: Air and Water Quality*, Chuck Kolb (U.S.A.), Yehuda Sheva (Israel), Alfred Abed Rabbo (Palestine); *Nanotechnology and Material Science*, Hadi Hadizadeh (Iran; unable to attend), Ron Naaman (Israel).

Events that promoted further personal interactions included breakfasts, lunches, and a welcome reception and dinner. Important social events were provided for the participants: a reception at the residence of the U.S. Ambassador to UNESCO, David Killion and his wife; a reception at the residence of the British Ambassador to France, Sir Peter Westmacott (who is now the British Ambassador to the U.S.); a dinner at the Restaurant 58 Tour Eiffel; a farewell banquet on a cruise on the Seine.

At Malta-I, the initial atmosphere was like that of a junior high school dance with the various national groups clustered on different sides of the floor; by the end of the conference, the atmosphere was more like the end of summer camp with the participants truly sad that the extraordinary experience was coming to an end. At Malta-III, national and international politics were freely discussed and a resolution was unanimously passed that expressed concern about the state of the water supply in Gaza. At Malta-V, more than one-third of the attendees had participated in at least one previous Malta Conference, and personally knew many others. This had a very positive effect on the depth of the personal interactions during the five days in Paris.

On a happy note, mention should be made that the 2011 winner of the Nobel Prize in Chemistry, Dan Shechtman (Technion-Israel Institute of Technology, Haifa), was a participant at Malta-I. On a sad note, we mourn the passing of Nobel Laureate Sherry Rowland (University of California-Irvine), who was a supporter of the goals of the Malta Conferences, and a participant at several of them.

Malta-V was organized by the Malta Conferences Foundation, a 501(c)(3) non-profit corporation; NESACS members on the Board of Directors are Cathy Costello (Boston University Medical School), Chuck Kolb (Aerodyne Research), and Morton Hoffman (Boston University). Dudley Herschbach (Harvard University) serves as a member of the MCF International Advisory Committee. Information about MCF can be found at <[www.maltaconferencesfoundation.org](http://www.maltaconferencesfoundation.org)>.