
REPORT

39th International MEDICHEM Congress on Occupational and Environmental Health in the Production and Use of Chemicals “Occupational Health in a Changing World”, Heidelberg, Germany, 2 - 5 June 2011

REPORT OF THE CHAIR OF THE ORGANISING AND SCIENTIFIC COMMITTEES OF MEDICHEM 2011 CONGRESS

International MEDICHEM Congresses have been held since 1972. From 1974, they have been organised continuously each year, either as a sole event or a separate session within a Congress of the International Committee of Occupational Health (ICOH) where MEDICHEM Board acts as the Scientific Committee on Occupational Health in the Chemical Industry.

The 39th international MEDICHEM Congress was held in Heidelberg, Germany, between 2nd and 5th June 2011 under the motto “Occupational Health in a Changing World”. This exceptional event brought together 165 experts from 30 countries for 56 oral and 11 poster presentations. The Congress provided occupational medicine specialists, scientists, and young researchers in the chemical and pharmaceutical industry, as well as epidemiologists, toxicologists, and experts on environmental protection, occupational health and safety regulations with a forum to exchange their experiences and cutting-edge scientific findings. This was the second time in 25 years that the MEDICHEM Congress was held in Germany. It was organised by the German Social Accident Insurance Institution for the Raw Materials and Chemical Industry (Berufsgenossenschaft Rohstoffe und chemische Industrie, BG RCI) in Heidelberg. The Marriott Hotel turned out to be the ideal venue for a congress that attracted a total of 218 participants, 165 congress participants, and 53 accompanying persons.

The official language during the Congress and accompanying events was English.

The Congress began on Thursday with an optional field trip of 75 participants to the “Cradle of MEDICHEM”, that is, the world’s leading chemical company BASF (Badische Anilin und Soda Fabrik) in Ludwigshafen. The former BASF Physician-in-Chief and current Honorary President of MEDICHEM, who established MEDICHEM in 1972 (39 years ago to be precise), almost 90-year old Prof. Dr. med. Dr. h.c. Alfred Michael Thiess not only guided the participants through the trip but also delivered an impassioned welcome address with visible pride. The latter occasion was the opening ceremony on the evening of 2nd June 2011, at the behest of Dr. med. Maren Beth-Hübner, the organiser and facilitator of the Congress, Dr. Thiess passed then the floor to other speakers delivering a welcome address on the evening: the Mayor of the city of Heidelberg, Dr. Joachim Gerner, the Chairman of the Supervisory Board of BASF SE, Dr. Eggert Voscherau, who also stepped in for the President of the Industrial Union of Mining, Chemical and Energy (IG BCE), Hanover, Michael Vassiliadis, who was unable to attend owing to illness, the Executive Director of the German Chemical Industry Association (VCI), Dr. Gerd Romanowski, the spokesman of the Board of Management of BG RCI, Thomas Köhler, and other dignitaries, the representatives of WHO, and guests from all over the world, welcoming into his “MEDICHEM family fold” the 23 new MEDICHEM members from 13 countries gained from the Congress.

During the following two and a half days, the Congress participants keenly followed the welcome address delivered by the Chairman of MEDICHEM, Dr. Thirumalai Rajgopal, Vice President, Medical and Occupational Health, Hindustan Unilever Limited & Head of Occupational Health, Unilever Asia, India, the introduction to the event’s hosting organisation, the BG RCI, given by the spokesman of the BG RCI’s Board of Management, Thomas Köhler, and the introduction to the ambitious scientific program by the Director of

the Institute of Environmental Toxicology from Martin-Luther University Halle-Wittenberg, Halle/Saale, Professor Heidi Foth, who is also a member of the board of EUROTOX and ICOH. Seven highly acclaimed keynote speakers, 11 invited experts, and 27 submitted oral presentations provided a detailed insight into the latest findings on the link between shift work and cancer, the opportunities and risks of nanotechnology, new findings in biomarker research and toxicology, trends, case reports, regulation in industrial medicine, as well as the initiatives of Strategic Approach to International Chemicals Management (SAICM) and the European Community Regulation on chemicals and their safe use (REACH).

Congress sessions started on Friday morning. The first session was Shift work and cancer - Current discussion (chaired by Dr. Michael Nasterlack and Dr. Abed bin Onn). The results on the carcinogenicity of shift work were interpreted quite differently by the three speakers and fuelled highly controversial discussions. Professor Kurt Straif, Head of the Section of the IARC Monographs, official publication of International Agency for Research on Cancer (IARC), Lyon, France, presented the very latest findings gleaned from epidemiological studies in 2007. These, in the opinion of IARC, confirm the view that shift work, which causes disruption of the circadian rhythm, is "probably carcinogenic to humans" and thus could be classified by IARC as Group 2A. Professor Thomas Erren, Director and Chair of the Institute and Policlinic for Occupational Medicine, Environmental Medicine and Prevention Research at the University of Cologne, Germany, considered the results achieved from observations of human beings to be inconclusive. He underlined that additional studies with a specific epidemiological design were needed before any statements could be made on the carcinogenic effect on humans of shift work that involves disruption of the circadian rhythm. In a major study conducted over a ten-year period with 13,000 BASF employees who were employed in BASF's special shift work system, Dr. Michael Nasterlack, Vice-President of the Occupational Medicine & Health Protection in BASF, said that he was unable to detect a higher rate of breast cancer or any other cancer among shift workers compared to 17,000 BASF employees who only worked the day shift, nor could he detect a higher mortality rate. It is possible that shift work, similar to the BASF model that avoids disruption of the "internal", approx. 24-hour day/night rhythm, can actually prevent an increased risk of cancer.

Other sessions held on Friday were: Case Reports - Interesting observations in the occupational health world (chaired by Dr. Andreas Flückiger and Dr. Diane J. Mundt); Toxicology - New results, emerging risks (chaired by Prof. Dr. Günter Oberdörster and Dr. Kenneth A. Mundt); Regulation in occupational health - Recent developments and REACH - Impact on occupational and environmental health (chaired by Prof. Dr. Andrea Hartwig and Prof. Dr. Heidi Foth); Strategic Approach to International Chemicals Management (SAICM) - Status and developments (chaired by Prof. Dr. Maged Younes and Prof. Dr. Helmut Greim).

There is no doubt that Saturday, which opened with theme Nanotechnology - Challenges and Solutions (chaired by Prof. Dr. Uwe Heinrich and Dr. Maren Beth-Hübner) was the most eagerly anticipated day of the Congress. It brought together leading international scientists in the field of nanotechnology: Professor Günter Oberdörster, USA, Professor Uwe Heinrich, Germany, Professor Ken Donaldson, Scotland, and Professor Vincent Castranova, USA. Although they were unable to give the all-clear, the researchers were able to highlight specific features that can pose a risk to human health and others that can help to avoid them. For example, long and thin carbon nanotubes (CNTs), which resemble asbestos fibres in appearance and exhibit a needle-like shape, can also have similar effects. Professor Vincent Castranova used an electron micrograph to demonstrate in a most impressive way that these inhaled fibres are too bulky to be further transported and absorbed by the body's own cells. Instead, they are trapped in the pleural cavity where they cause persistent inflammation that can ultimately lead to pleural mesothelioma, the well-known cancer of the lining of the lungs that is caused by exposure to asbestos. The Chairpersons of the eight presentations on the subject of nanotechnology proclaimed this image "Photo of the year" since it visualised the underlying mechanisms of injury more clearly and immediately than any other image (see the photo attached). The Chairperson of the MAK Commission, that is, the Senate Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area, Professor Andrea Hartwig, suggested classifying various nanomaterials according to their hazard potential. Nanofibres and metal-based nanoparticles would need to be researched individually and assessed in a differentiated manner. Speakers from industry, the VCI, and the BG RCI presented technical and organisational occupational

safety and health measures that can prevent exposure and safeguard safety at work.

Another session held on Saturday was Adverse effects on employees, customers and the general public - Preventive measures (chaired by Dr. Michael Nasterlack and Dr. William Murray Coombs). This Congress day was closed by MEDICHEM General Assembly.

Although Sunday was the last Congress day, it was just as busy as all previous ones. Based on the number of contributions submitted, Sunday morning opened with session Biomarkers - Progress in research and practical application (chaired by Dr. Heiko U. Käfferlein and Dr. Martina Piasek). The session dealt with one of the thematic focal points of the Congress and contained nine presentations on human biomonitoring of occupational and/or environmental exposures.

Session that closed the Congress was Occupational health - Trends and evolution (chaired by Dr. Steffen Hützerth and Dr. Andreas Flückiger). It began with an impressive keynote lecture on psychosocial risks at the workplace delivered by Dipl. Psych. Roland Portuné, an occupational psychologist with the BG RCI. Today there is no longer any doubt about the causal relationship between growing psychosocial stress at the workplace and damage to employees' health such as cardiovascular disease, affective disorders, and back pain. These disorders are becoming a growing challenge for occupational health and safety regulations. The final presentation, which dealt with unconventional threats to corporate leadership and was a highlight of the Congress, was delivered by Dr. William Lang, the former Medical Director at the White House, Washington DC, USA, where he was responsible for medical care services for the White House members of staff and the President. In accordance with the theme of the Congress "Occupational Health in a Changing World", Dr. Lang explained that weapons of mass destruction (chemical, biological, radiological, and nuclear weapons that have the potential to kill and bring significant harm to a large number of humans) are nowadays aimed more at disrupting basic functions of critical infrastructures and destroying economic power. This means the management echelons of multinational groups and regional business enterprises have become the target of potential attacks. A large number of photographs from the world of politics and industry, which document examples of potential targets, highlight the explosive nature of the theme in our ever-changing world for the large number of senior company

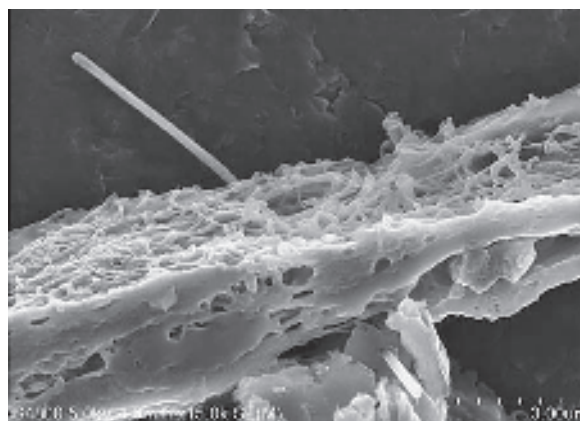


Image: Multi-walled carbon nanotube penetrating the pleura (electron micrograph by Vincent Castranova)

physicians in the numerous chemical and pharmaceutical multinationals in attendance. The Congress ended at around 2:00 pm after promotion of next MEDICHEM Congresses in 2012 and 2013.

Poster presentations covered almost all Congress themes and were exhibited during the entire period of Congress sessions. Two winners of the MEDICHEM Scholarship Award 2011 were Dr. Martina Piasek, Croatia and Dr. Caihong Xing, China. Three participants granted the MEDICHEM Young Professionals Award 2011 were Dr. Keiichi Fujimoto, Japan; Prof. Dr. Ehsan Habibi, Iran; and Dr. Amir Radfar, Iran.

The varied social program, ranging from performances by the Heidelberg Brass Orchestra on the opening evening, and an organ concert featuring internationally recognised organist Wenzel Hübner, to a reception at the Palais Prinz Carl hosted by the City Mayor on Friday, culminated with a gala dinner at the world-famous Heidelberg Castle. The icing on the cake was a spectacular fireworks display over the city and River Neckar on Saturday evening. These events inspired not just maximum concentration during the keynote addresses but will ensure that the early summer stay in Heidelberg remains an unforgettable experience with nice memories for the 218 Congress participants from 30 countries all over the world.

Entire Congress brochure with abstracts was available to the Congress participants in printed version and it is now available at the following link: www.medichem2011.org.

Maren Beth-Hübner