Conference Call

TAN 19: International Superheavy Element Research Community

by Christoph Düllmann and Michael Block,
TAN 19 co-chairs

The 6th International Conference on the Chemistry and Physics of the Transactinide Elements (TAN 19) took place in Wilhelmshaven, Germany from 25-30 August 2019. About 130 researchers from 19 countries on 4 continents gathered to discuss all experimental and theoretical aspects of this multifaceted science field focusing on the heaviest elements. The scientists presented their most recent achievements investigating the atomic, chemical, and nuclear properties of these exotic elements at the end of the periodic table.

TAN 19 took place during the International Year of the Periodic Table (IYPT) 2019 proclaimed by the United Nations celebrating the 150th anniversary of the publication of this icon of the natural sciences by Dmitry Mendeleev in 1869. The periodic table has expanded to include 118 elements up to oganesson, which completes the periodic table's seventh period.

On the occasion of IYPT, the TAN 19 featured a special symposium. Key members of the teams that have discovered the chemical elements 107-118, including G. Münzenberg and P. Armbruster from the GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt, Germany, discoverers of elements 107-112 (bohrium, hassium, meitnerium, darmstadtium, roentgenium and copernicium), K. Morimoto from RIKEN Nishina Center for Accelerator-Based Science in Japan, member of the discoverer team of element 113 (nihonium), and Yuri Oganessian from the Joint Institute for Nuclear Research (JINR) in Dubna, Russia, the leader of the discovery teams of elements 114-118 (flerovium,

moscovium, livermorium, tennessine and oganesson) were among the distinguished participants.

This IYPT special symposium featured welcome addresses from the presidents of the International Unions of Pure and Applied Chemistry (IUPAC) and Physics (IUPAP), Prof. Zhou and Prof. Spiro, respectively, and their national counterparts from the Deutsche Physikalische Gesellschaft (DPG) and the Gesellschaft Deutscher Chemiker (GDCh), Prof. Meschede and Dr. Urmann, respectively.

Prof. G. Münzenberg, Dr. Morimoto and Prof. Oganessian reviewed their pioneering work on the element discovery experiments. Their presentations were complemented by talks from Prof. K. Ruthenberg (HS Coburg, Germany), Dr. P. Thyssen (KU Leuven, Belgium) and Prof. G. Boeck (Univ. Rostock, Germany) that illuminated historical and philosophical aspects of the Periodic Table. G. Boeck, for example, described the role of the German Chemist Lothar Meyer in the development of the periodic table. He was born in Varel, a small nearby town south of Wilhelmshaven. The present directors of the research centers where the elements 107-118 were discovered, Prof. P. Giubellino, Scientific Managing Director of GSI and the international facility FAIR (Facility for Antiproton and Ion Research) that is presently under construction in Darmstadt, Prof. H. En'yo, and Prof. S. Dmitriev, director of JINR's Flerov Laboratory of Nuclear Reactions discussed the future research directions in superheavy element research in their laboratories.

The TAN conference series was established in 1999, when it took place in Seeheim, Germany. It was then held in the USA, Switzerland, Russia and Japan, and now returned back to Germany. The meeting was organized by the GSI Helmholtzzentrum für Schwerionenforschung in Darmstadt, the Helmholtz Institute

Element discoverers, lab directors and the conference chairs during the special symposium on the occasion of IYPT 2019. (From left to right: Prof. Düllmann, Prof. Armbruster, Prof. Münzenberg, Prof. Giubellino, Dr. Morimoto, Prof. En'yo, Prof. Dmitriev, Prof. Oganessian, Prof. Block) (copyright: GSI)

Participants of the TAN19 conference (copyright: GSI)

Mainz, and the Johannes Gutenberg University Mainz, with Prof. Ch. Düllmann and Prof. M. Block as conference chairs. The scientific program comprised 51 oral presentations and 38 poster contributions. Six young scientists received awards sponsored by NuPECC and GDCh for their outstanding poster contributions.

The TAN 19 was endorsed by IUPAC, IUPAP, and EuChemS and was financially supported by DFG, GDCh, NuPECC, Johannes Gutenberg University Mainz, GSI Helmholtzzentrum Darmstadt, and Helmholtz Institute Mainz.

4th IUPAC International Conference on Agrochemicals Protecting Crops, Health and Natural Environment Discovery and development of synthetic and natural products for health and pests management

by Najam Akhtar Shakil and J. Kumar, Conveners

The 4th IUPAC International Conference on Agrochemicals Protecting Crops, Health and Natural Environment—"Discovery and development of synthetic and natural products for health and pests management" was held at the National Agricultural Science Centre Complex, New Delhi, India from 7-10 January 2020. The conference acted as a forum for scientists of different disciplines, from academia, government, and industry to discuss the latest trends and discoveries in agrochemicals and phytomedicines and to suggest how these may impact on future policies at State and National levels. Honorable Union Minister of State for Panchayati Raj and Agriculture and Farmers' Welfare, Government of India, Shri Parshottam Rupala, was the Chief Guest of the inaugural function while Secretary, Department of Chemicals

and Petrochemicals, Govt. of India, Shri P. Raghavendra Rao was a special guest. A.K. Singh, Deputy Director General (Agricultural Extension), ICAR and Director, Indian Agricultural Research Institute, Pusa, New Delhi and Co-Patron of the function was also present at the Inaugural function. Rai Kookana, CSIRO, Australia, IUPAC representative, Jitendra Kumar & N.A. Shakil, conveners and Pankaj & V.S. Rana, co-conveners along with esteemed invited guests, distinguished delegates, representatives from academic and industry partners and media were present during the inaugural function on 7 January 2019. The conference attracted over 265 participants coming mainly from India but also from both developed and developing countries such as Japan, Sudan, USA, Australia, Germany, Switzerland, Afghanistan, etc. and included around 150 young scientists. The scientific programme was supplemented by an exhibition of scientific equipment and laboratory supplies.

The conference was spread over four days and had eleven plenary lectures, 36 invited lectures and 61 oral presentations in 24 sessions as well as 44 poster presentations in 3 different sessions by the different participants from India and abroad. A total of 20 delegates from 10 different countries such as USA, Australia, Japan, Switzerland, Venezuela, Afghanistan, Sudan were also present during the conference. The inaugural session was covered by Delhi Doordarshan Kisan, Official Agriculture Channel of India, and was telecast on 9 January 2020. Each day of the conference started with a plenary session and over the four days eleven plenary lectures were given covering various aspects of the research and development of agrochemicals, integrated pest management, nutraceuticals, and medicinal plants. The plenary lectures were delivered by scientists coming not only from India but also from Australia, USA, Japan, and Switzerland. The plenary sessions