3rd INTERNATIONAL CONFERENCE ON THE CHEMISTRY AND PHYSICS OF THE TRANSACTINIDE ELEMENTS

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The 3rd International Conference on the Chemistry and Physics of the Transactinide Elements was being jointly organized by the Paul Scherrer Institut (PSI) and the Department of Chemistry and Biochemistry of Bern University, Switzerland. In addition it was sponsored by IUPA, Eu chem, Swiss Chemical Society and Swiss Nuclear Forum.

It was held at the Congress Center of Davos from Sunday 23 th September to Friday 28 th september 2007.

Over two hundred scientists from thirty one countries all over the world have shared in this conference. Registration for the conference have been organized at the following time in the Welcome Plaza.

Eminet workers in the field of transactinide elements were being invited to present plenary and session lectures. These lectures matched the themes of the poster sessions.

The topics were broad and covered the whole range of the chemistry and physics of the transactinide elements.

The scientific programme included number of high quality plenary lectures about the following subjects:

- Nuclear Density-Functional Theory Applied to Super-Heavy Elements.

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- Low Energy Nuclear Reactions with Transactinides.
- Heavy Ion Induced Fusion Reactions with Uranium Targets.
- Heaviest Nuclei from ^{48}Ca-Induced Reactions.
- Recent Achievements in the Search for Transactinide Nuclei.
- Gas Phase Chemistry with Transactinides.
- Liquid Phase Studies of the Transactinides.
- The Astrophysical r-Process: Source of the Heaviest Elements.
- Four-Component Relativistic Quantum Theory for Superheavy Elements.
- K-Isomers in Transfermium Nuclei.

The main themes of the conference were achieved by fifty six oral prestation and one hundred and sixteen poster contributions describing work carried out by postgraduate research students in universities and colleges and workshops.

The most important main themes of the conference included the following subjects:

- Orientation Effects of Deformed ^{238}U Target Nuclei on the Fusion-Probability for Heavy Element Synthesis.
- Influence of Projectile Neutron Number on Cross Section in Cold Fusion Reactions.
- Toward New Compound Classes of Transactinides: Studies of Volatile Group 4 Element Metal Complexes with Hexafluoroacetylacetone.
- Radiochemical Isolation of Dubnium as the Decay Product of Element 115.
- Transactinide Research with Ion Traps.
- Alpha-gamma Spectroscopy of N = 155 and 157 Nuclei Using a Gas-jet.
- Search for the "Missing" ∞ -Decay Branchin ^{239}Cm.
- Specrtoscopy of Transfermium Isotopes at Dubna: Results and Plans.

The posters represented an integral part of the conference. Two separate sessions have been organized due to the large number of

posters in the programme. Swiss Nuclear Forum sponsored three poster prizes for the best three posters. Evalution of the posters have been performed by members of the International Advisory Committee.

The most important Poster Session included the following subjects:

- Alpha Fine Structure Spectroscopy for Heavy-and Transactinide Nuclei.
- Development of a Technique: Electrodeposition of Actinides for Alpha Spectrometric Determination.
- Angular Correlations in the Two-Photon Decay of Alignedhydrogen-like U^{91+} Ions.
- Extractive Electrospray Ionization Mass Spectrometry for Gas Phase Uranium Chemistry.
- Fishing Uranium From Complex Matrices Using Extractive Electrospray Ionization Mass Spectrometry.
- Isomeric States In ^{213}Th and ^{214}Th.
- Fission and Quasi-Fission Properties of ^{250}No (Z=102).
- Separation and Determination of Actinides from Nucler Spent Fuel Solution by Alpha Spectrometry.
- Possible Existence of a Superactinide Nucleus with Atomic Mass Number A= 292 in Natural Th.
- On the Yield of Deep Sub-Barrier Fusion Reactions.
- Isothermal Vacuum Adsorption Chromatography (IVAC) for Determination of Chemical Properties of Super Heavy Elements.
- Experimental Study of the Xe-136 + Xe-136 Reaction.
- A New Approach to Investigate the Chemical Properties of Dubnium.
- Study of the Isomeric Ratio of Fragment ^{135}Xe in Photofission of Heavy Nuclei.

The scientific programme focused on a number of workshops discussion sessions, followed by a discussion on the developments achieved.

The most important workshops of the conference included the following supjects:

- The Gas-filled Recoil Separator Ritu at Jyel.
- Evolution of the New Experimental Set Ups for Studies of Transfermium Elements in the Reactiond with Heavy Ions at Flnr Jinr.
- Future Plan of the Experimental Program on Synthesizing the Heaviest Elements at Rlken.
- Synthesis and Separation of Fm and No Isotopes Using TASCA.
- Recoil Transfer Chamber Commissioning at TASCA.
- New Chemical Compounds of Seaborgium in the Gas Phase.
- Coupling of Isothermal Vacuum Chromatography (IVAC) to TASCA.
- Structure of Very Heavy Nuclei-First Possible Experiments at TASCA.

A professional exhibition of scientific equipments was held in association with the conference.