



Integrated Chemistry Conference

ICCON 2013

14-15 Dec 2013

CONFERENCE REPORT

Department of Chemistry

The Department of Chemistry, Prashanti Nilayam Campus organized a two day conference, titled, "**Integrated Chemistry Conference- ICCON 2013**" on 14th & 15th December' 2013. Prof. (Mrs.) H. S. Savithri, Chairperson, Department of Bio Chemistry, Indian Institute of Sciences had graciously consented to be our chief guest. She delivered the inaugural keynote address for the conference.

The primary objective of this conference was to give a sound exposure to the postgraduate students and research scholars of the Department on the integrated approach in understanding and solving scientific problems with practical insights, leading to a high quality research mind. We invited eminent experts from reputed academic giants like IISc & RRI, leading industries in the field of research like Tata Chemicals and Biocon and even well established government research institutes like Geographical Survey of India.

The reputed experts shared their experience and gave us their valuable insights into the nature of challenges that these young minds will be facing in the near future. We covered the fields of Surface chemistry, Coordination chemistry, Bio-chemistry, Computational chemistry, Environmental chemistry, Nano Bio technology and Spectroscopy during this conference.

DAY 1 - INAUGURAL SESSION

The program commenced with the ceremonial lighting of lamp by the **Honorable Chief Guest, Prof. H S Savitri, Professor and Chair Person, Dept of Biochemistry, Indian Institute of Science, Bangalore** followed by the Veda recital by the students.

Prof. Chelli Janardhana, Dean of Sciences and Head of Department of Chemistry, SSSIHL then delivered the welcome address highlighting the significance of integrated approach in dealing with scientific problems.

His talk was followed by the inaugural and Keynote address by **the Chief Guest, Prof. H S Savitri, Professor and Chair Person, Dept of Biochemistry, Indian Institute of Science, Bangalore** who spoke on, "Viral Nanotechnology in Medicine".

The inaugural session concluded with the Vote of thanks and summary presentation by **Dr. R Sai Sathish, Asst. Professor, Department of Chemistry, SSSIHL**.



TECHNICAL SESSION 1

The 1st technical session for the day was chaired by **Dr. Jagadeeswara Rao**, Associate Professor, Dept. of Chemistry, SSSIHL.

The first speaker of this session was **Prof. V Lakshminarayanan** from **Soft Condensed Matter Lab, Raman Research Institute, Bangalore** who spoke on 'The many facets of Self-Assembled Mono-layers of Organo Thiols'. His talk covered the field of physical chemistry with the specific focus on the Self Assembled Monolayer's (SAM) from the area of Surface Chemistry. He showed us the promising potentials of organic thiol molecules on surfaces as building blocks for electronics, with applications of sensors and bio sensors.

The next speaker was **Prof. Hussain Reddy**, Department of Chemistry, Sri Krishnadevaraya University, Anantapur who spoke on 'Known Concepts, Novel Results & New Challenges in Bioinorganic Chemistry'. He gave us the biological perspective of the functional modalities of coordination compounds in nature and their in-vitro application in metal based drugs for the therapeutic purpose. He highlighted the chemistry of metal based anticancer agents, emerging trends in the development of coordination compounds as anticancer drugs, metal-DNA interactions and the challenges associated with the metal-based drug development.

The first technical session of ICCON- 2013 closed with summary presentation of the two talks by a Second year Postgraduate Student.





TECHNICAL SESSION 2

The second technical session commenced with **Prof. Lakshminarayan** as the chairperson. He convened a panel discussion with four panel members including **Prof. J Shashidhara Prasad, Vice-Chancellor, SSSIHL**, **Prof. H S Savithri**, **Prof Hussain Reddy** and **Prof. George W Ordal, Professor Emeritus, University of Illinois, Urbana Champaign** and a visiting faculty for Department of Biosciences, SSSIHL.

The panel discussion revolved around the topic of how to strike a balance between basic research and applied research, their individual role towards contribution to science and society.

We then had **Dr. K Anil Kumar, Principal Scientist at Tata Chemicals Ltd., Innovation Centre Pune**, speaking to us on 'Frugal Innovation – Instances in Nano-Biotechnology.'

He showed us how the ancient wisdom of our scripture could be used in enhancing the modern technological output. He sighted some examples from agricultural industry, tyre industries etc. to corroborate his point. He also gave us the overview of the latest innovative initiatives at Tata chemicals in the field of nano biotechnology.

The next speaker for the session was **Dr. Vinayak Kumar Sinha, Asst. Professor at the Indian Institute of Science Education & Research (IISER), Mohali**, who spoke on 'New insights on emission and chemistry of VOCs from high time resolution in-situ measurements in the Himalayan foothills.'

He shared with us the two major findings of the in-situ monitoring of the emissions of Volatile organic compounds (VOCs) and their impact on the air quality and global atmospheric chemistry done by his team at the foothills of Himalaya. He also highlighted the effect of massive release of carcinogenic and mutagenic benzenoids from post harvest crop residue burning activity in North India in the months of April-May and October-November every year. The new results were discussed with relevance to regional atmospheric chemistry and air quality.

The technical session for the day concluded with a summary presentation of the two talks by a Second year Postgraduate Student.



TECHNICAL SESSION 3 (DAY 2)

The 3rd technical session was chaired by **Dr. G Nageswara Rao**, Associate Professor, Dept. of Chemistry, SSSIHL.

The first speaker for the session was **Sri G Krishna Prasad**, M.Phil. student, Dept. of Chemistry, SSSIHL who spoke on, '1, 10- Phenanthroline and its derivatives'.

He compared the structural features of Phen and 2, 2'-Bipyridines and showed us how Phen is more structurally more suited for complexation compared to 2, 2'-Bipyridines. He also showed us the synthetic routes of some new ligands and their transition metal complexes.

His talk was followed by a talk by **Dr. Ramesh Sistla**, Lead Investigator, Head of CADD at Biocon BMS R&D Center (BBRC), Syngene International Limited, Bangalore, who spoke to us on 'Structure based design of a protease inhibitor'.

He explained the significance of molecular docking and their role in designing potent and selective small molecules as modulators of drug targets.

The next speaker was **Dr. Nanduri Srinivas** Associate Professor, Department of Medicinal & Process chemistry, NIPER, Hyderabad.

He spoke on 'Discovery of Novel Kinase Inhibitors for the treatment of Cancer' which covered the interesting field of enzyme inhibitors where a drug molecule binds to the target enzyme and inhibits its activity, resulting in recovery from the metabolic imbalance or death of pathogens that thrive on such enzymatic activity.

This session ended with the summary presentation of the talks of this session by a Second year Postgraduate student.

TECHNICAL SESSION 4

The next technical session was chaired by **Dr. Ramesh Sistla**.

The first speaker for the session was **Dr. J S Bhargav**, Chemist, Geological Survey of India, Southern Region, Hyderabad who spoke on, 'Application of Analytical Chemistry in Earth Sciences- A retrospection and Advancements'.

He showed us the importance of monitoring environmental parameters in atmosphere, hydrosphere and lithosphere and the latest technological advancements in this field.





Department of Chemistry

Integrated Chemistry Conference | 14-15 Dec 2013

His talk was followed by a talk by his colleague **Mr. K Siva Shankar, Chemist, Geological Survey of India, Southern Region, Hyderabad**, who spoke on 'Inductively coupled plasma spectroscopy- Evolution & its applications.'

He gave us an overview of how we have journeyed from accurate measurement at the level of ppm to sub-ppb levels. The developmental phases of Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS) was elaborated.

His talk was followed by a talk by Sri Ch. Sai Manohar, who spoke on, 'Molecular docking approach to evaluate inhibitory activity of Camptothecin and its derivatives on DNA - Topoisomerase I.'

He gave us a brief outline of Computer Aided Drug Design with Molecular Docking in specific. He spoke about the pivotal role of enzyme - Topoisomerase I in multitudinous vital processes of cell cycle coupled with its elevated level in solid tumors which has rendered it a promising target for treatment of concerned types of cancers.

We then commenced the closing ceremony for the ICCON 2013 with the Valedictory address by **Prof. J Shashidhara Prasad, Vice-Chancellor, SSSIHL**.

His talk was followed by the overall summary presentation by the convener of the ICCON 2013, **Dr. B Siva Kumar, Asst. Professor, Department of Chemistry, SSSIHL**.

The vote of thanks was proposed by **Dr. A Sunil, Post-Doctoral Research fellow, Department of Chemistry, SSSIHL** on behalf of the organizing team. His colleague, **Dr. Sasidhar V Siddabattuni, Post-Doctoral Research fellow, Department of Chemistry, SSSIHL** offered the Mangala Aarti, thus bringing the conference to an end.

The organizing team of ICCON – 2013 offers their love and gratitude to the revered Founder Chancellor of SSSIHL, Bhagawan Sri Sathya Sai Baba for steering this conference to successful completion with His Divine Blessings.





TEAM ICCON 2013 (SSSIHL)

PROGRAMME COMMITTEE

Conference Chair

Prof. Chelli Janardhana – Dean of Sciences and HOD

Chair Persons

Dr. S Jagadeeswara Rao – Associate Professor

Dr. G Nageswara Rao – Associate Professor

Convener

Dr. B Siva Kumar – Asst. Professor

LOCAL ORGANISING COMMITTEE

Dr. Sai Sathish, Asst. Professor

Dr. Rajesh Babu, Asst. Professor

Dr. Prathap Chandran, Asst. Professor

Dr. A Sunil, Post-Doctoral Research Fellow

Dr. Sasidhar V Siddabattuni, Post-Doctoral Research Fellow

HOSPITALITY AND LOGISTICS

Sri Sai Giridhar Sairam, Doctoral Research Scholar

Sri M. Ramakrishna, Doctoral Research Scholar

Sri K M Ganesh, Doctoral Research Scholar

Sri Nagasai Visweswar, Doctoral Research Scholar

Sri G Abhilash, Doctoral Research Scholar

Sri Sai Giridhar Sarma, Doctoral Research Scholar

Sri Sai Siddhartha, Doctoral Research Scholar

Sri Manne Anupam, Doctoral Research Scholar

Sri Pradeep Badiya, M.Phil. Scholar

Sri Venkatesh, M.Phil. Scholar

Sri Krishna Prasad, M.Phil. Scholar

Sri Ch Sai Manohar, M.Phil. Scholar

Sri Y Sandeep, Research Assistant

STUDENT PARTICIPANTS

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Sri Prithvik Shankar, I M.Sc.

Sri Sai Goorang Patnaik, I M.Sc.

Sri Swayamsiddha Kar, I M.Sc.

Sri V Sidhartha, I M.Tech.

Sri Harsha A, I M.Tech.

Sri Kadam Shreyas Vaibhav, II M.Sc.

Sri Nived K C, II M.Sc.

Sri N Sai Pavan Chakravarthi, II M.Sc.

Sri Raushan Kumar, II M.Sc.

Sri Soham Panda, II M.Sc.

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