

CRSI Council

2017 - 2020

President

N. Sathyamurthy

Immediate Past President

Sourav Pal

Founder - President

C.N.R. Rao

Vice-Presidents

S. Chandrasekhar

R. Murugavel

D. Ramaiah

Vinod K. Singh

Vice-President /**Secretary General**

G. Mugesh

Secretary

Satish Patil

T. Govindaraju

Treasurer

K.P. Kaliappan

Jt. Secretaries

P. Phukan

K.R. Prabhu

C.V. Ramana

A.K. Tyagi

Jt. Treasurer

P. Gautam

Council Members

Rakeshwar Bandichhor

Vandana Bhalla, J.K. Bera

Amitava Das, Swagata Dasgupta

Ramesh C. Deka, K. George Thomas

Ashutosh Ghosh, Pradyut Ghosh

Prasenjit Ghosh, Neelima Gupta

Rama Kant, Surinder Mehta

Anirban Misra, Lallan Mishra

S. Muthusamy, A.K. Panda

T. Punniyamurthy, N.G. Ramesh

A. Samanta, G. Sekar, A. Srinivasan

P. Sujatha, V.V. Sureshbabu

Sandeep Verma

FROM THE PRESIDENT'S DESK

The year that went by was great for the Chemical Research Society of India. C.N.R. Rao, the Founder President, CRSI, received the Von Hippel Award from the Materials Research Society of the United States of America.

Soon after taking charge as the President, CRSI, I had the pleasure of hosting the meeting of the Executive Council of the Federation of Asian Chemical Societies (FACS) in April 2017 at IISER Mohali, on behalf of Sourav Pal, my predecessor and a member of the Executive Council of FACS. During the meeting of FACS in Melbourne, Australia in July 2017, G. Mugesh, Secretary General, CRSI was elected the President of the Asian Chemical Editorial Society (ACES) for a four-year term starting from 2018.

The 21st National Symposium of CRSI was hosted by CSIR-IICT during July 14-16, 2017. S. Chandrasekhar and his colleagues had organized a scientifically rich meeting, in style. It was preceded by the first CRSI-ACS symposium on July 13 in the same venue. George C. Schatz, the Editor-in-Chief, Journal of Physical Chemistry gave the opening lecture. It was followed by a set of lectures by the rising stars of the chemistry community of India.

The 22nd National Symposium was ably organized by Kallol Ghosh and his colleagues of the Pandit Ravishankar Shukla University, Raipur during February 2-4, 2018. It was preceded by a CRSI-RSC symposium on Feb. 1, 2018.

There is a steady increase in the number of quality publications in chemistry coming from India in high profile journals. The work of Joyanta Chowdhury of IISER Bhopal on ionic liquids was highlighted by C&E News. The star shaped molecule synthesized by Dilip Chand of IIT Madras was in the race for the Molecule of the Year 2017. C&E News also highlighted the contribution of Biman Bagchi, IISc Bangalore in showing that water molecules play a crucial role in keeping the tetramer together to keep insulin active. A picture of Arjuna targeting the rotating fish appeared on the cover page of an issue of EJOC to illustrate the focussed efforts of D. B. Ramachary of the University of Hyderabad, in synthesizing the desired chemical.

The Council meeting in IICT Hyderabad in July 2017 took a historic decision to reduce the CRSI life membership fee by 50% for the students. This led to an enthusiastic enrolment by students and the life membership of CRSI crossed the 2000 mark. I hope more and more students will come forward to become life members of CRSI. They get to register for one annual meeting of CRSI, free of charge. In addition, they get certain benefits from the Royal Society of Chemistry, London.

There is an urgent need to improve the fund position of CRSI and increase the academic activities. I appeal to each member of CRSI to persuade their colleagues to become life members and to persuade their organization to become Institutional Members.

It is important for the membership to nominate deserving colleagues for the bronze/silver/gold medals of CRSI. This is critical for the growth of CRSI and also for the quality of the talks given in each symposium. CRSI continues to award CRSI medals to active chemists of Indian origin. The CRSI fellowship goes to who is who of the chemistry community across the globe.

The number of Best Poster Awards in the CRSI Symposia keeps increasing each year, thanks to the increase in the number of sponsors. It is a pleasure to watch an increasing number of students participating in the poster sessions. Their animated discussions assure us that chemistry in India is alive and kicking.

CRSI has been singularly lucky in getting leading institutes and universities to come forward to host the National Symposia. The tradition continues with the 23rd National Symposium to be hosted by IISER Bhopal during July 13-15, 2018 and the 24th Symposium to be held in CLRI, Chennai during February 7-10, 2019.

I look forward to seeing each one of you in the forthcoming meetings.

Yours,

N. SATHYAMURTHY



NEWS AND ANNOUNCEMENTS

Von Hippel Award to C.N.R. Rao

C.N.R. Rao was awarded 2017 Von Hippel Award, the highest international prize in materials research. He is the first Asian to receive this prestigious award of Materials Research Society, USA, for his immense contribution in materials research. The award recognizes 'those qualities most prized by materials scientists and engineers -- brilliance and originality of intellect, combined with vision that transcends the boundaries of conventional scientific disciplines,' according to the MRS. The award citation noted C.N.R. Rao's immense work on novel functional materials, including nanomaterials (having particles of nanoscale dimensions), graphene (the strongest and thinnest material) and 2D materials, superconductivity, and colossal magnetoresistance (change in electrical resistance of a material in a magnetic field).

The award was presented in Boston on November 29, 2017 during an MRS meeting. C.N.R. Rao, reached yet another milestone by having more than 100,000 citations for his publications.



C.N.R. Rao receiving the Von Hippel Award at MRS meeting, Boston, USA.

The 23rd CRSI National Symposium in Chemistry and CRSI-ACS Special Session

The 23rd National Symposium in Chemistry (NSC-23) will be organized at Indian Institute of Science Education and Research (IISER) Bhopal, during July 13-15, 2018. A CRSI-ACS special session will be held as part of NSC-23. The next General Body Meeting will be held at IISER Bhopal on July 14, 2018. Members may contact the convener (Email: vinodks@iitk.ac.in, 23crsi-nsc@iiserb.ac.in) for further information. The list of speakers includes C. N. R. Rao, Antoni Llobet, Sandeep Verma, S. Sampath, M. V. Sangaranarayanan, R. Bandichhor, M. Chandrasekharam, Suhrit Ghosh, Jayanta Halder, Nitin Patil, Vinod Kumar

Shahi, Krishna Nand Singh, P. Sujatha Devi, Pinaki Talukdar, Rajesh K. Vatsa. RSC-ACS session: George C. Schatz, Subi J. George, Anshu Pandey, Ruchi Anand, Pritam Mukhopadhyay, Rajendra Srivastava. A thematic mini-symposium on chemical biology will also be organized. The speakers for this min-symposium include, Vishal Rai, Nandita Madhavan, Dimpy Kalia, Jyotirmayee Dash, Aasheesh Srivastava. In addition, many students will be presenting posters.



Indian Institute of Science Education and Research (IISER), Bhopal

The 24th CRSI National Symposium in Chemistry and 13th CRSI-RSC symposium

The 24th National Symposium in Chemistry (NSC-24) will be organized at CSIR-Central Leather Research Institute (CLRI), Chennai, during February 8-10, 2019. The 13th CRSI-RSC joint symposium will be held on February 7, 2019. For more information, contact V. Subramanian (Email: subuchem@hotmail.com; subbu@clri.res.in).



CSIR-Central Leather Research Institute (CLRI), Chennai

Highlights of the 21st CRSI National Symposium in Chemistry (NSC-21) and first CRSI-ACS joint symposium

The 21st National Symposium in Chemistry (NSC-21) was organized at CSIR-Indian Institute of Chemical Technology (CSIR-IICT) Hyderabad, during 14-16, 2017. The first CRSI-American Chemical Society (CRSI-ACS) joint symposium was organized on July 13, 2017. These two meetings were convened by Ch. Raji Reddy. The purpose of this symposium was to provide a forum for the scientists, teachers and students in the country to participate and discuss the recent development in chemistry. The symposium was very well attended with over 600 registered participants and about 80% of them were young Ph.D. and Masters' students.

NEWS AND ANNOUNCEMENTS



CSIR-Indian Institute of Chemical Technology (CSIR-IICT), Hyderabad

The inaugural session started with welcome remarks by Ch. Raji Reddy, Convener of the Symposium. S. Chandrasekhar, Director, CSIR-IIT Hyderabad, addressed the participants, highlighting the achievements of the Institute and also mentioned that IICT is was hosting the event for the second time. Satish Patil gave the welcome address on behalf of CRSI and mentioned about the rapid increase in the number of participants in the annual meetings. C.N.R. Rao, Founder-President, made special remarks on this occasion. This was followed by the presidential address and a scientific lecture by N. Sathyamurthy, President, CRSI. In the end of inaugural session, Ramanuj Narayan, Co-Convener, NSC-21, proposed the vote of thanks.



Inauguration of NSC-21 and Abstract Book release at CSIR-IICT, Hyderabad.

The symposium comprised of various special, medal and award lectures, a mini theme symposium and two poster sessions. The second session started with a special lecture by C. N. R. Rao, Founder President, CRSI, who talked about two-dimensional inorganic graphene analogues. This exciting talk included recent developments, chemical synthesis, modifications and novel properties and applications. The CRSI Medal Lecture was given by Krishnan Raghavachary, Indiana University, USA. He presented the limitations of existing DFT methods and development of new methods to include disparate results from different functionals stem from the systematic

errors in the underlying elementary reactions that represents the changes in the binding environment between reactants and products. Needs simplification. The first poster session was held along with lunch and ~400 students, postdocs and researchers enthusiastically presented their posters on their research work in all areas of chemistry.



A Special Lecture by C.N.R. Rao, Founder President, CRSI, at NSC-21

In session IV after lunch and Poster session, Darshan Ranganathan Memorial Lecture was delivered by Siddhartha Roy, Bose Institute, Kolkata. He presented transcription factors as tools and their involvement in regulation of genes important for tumor proliferation. Emphasized the importance of designing peptide mimics as synthetic transcription factors to probe gene regulatory networks and to develop therapeutic agents. Kana Sureshan, IISER, Thiruvananthapuram, gave the Bronze Medal lecture and presented design and execution of topochemical reactions and synthesis novel biopolymer mimics and their applications. B. V. Subba Reddy, CSIR-IICT, Hyderabad, gave general introduction to domino-cyclization and their work on the construction of spirocyclic compounds in his Bronze Medal Lecture. The first day of symposium was ended with by cultural programme organized by CSIR-IICT community.



N. Sathyamurthy and Javed Iqbal presenting the Certificate and memento to Siddhartha Roy after his Darshan Ranganathan Lecture at NSC-21

NEWS AND ANNOUNCEMENTS

The second day of the symposium started with C.N.R. Rao National Prize for Chemical Research, lecture delivered by C.V. Ramana, CSIR-National Chemical Laboratory (NCL), Pune. He talked about how the structural complexity and skeletal diversity of natural products inspire the development of new synthetic methodologies, which in turn could be used for the synthesis of natural products of biological relevance. He presented a comprehensive compilation of various transformations that were developed in their laboratory with salient aspects for the accomplished total synthesis. This lecture was followed by three Bronze Medal lectures: V.G. Anand, IISER, Pune presented the possibility of neutral radical intermediates formed between $(4n+2)\pi$ and $4n\pi$ systems corresponding to either $(4n+1)\pi$ or $(4n+3)\pi$ electrons. Anti-aromatic macrocycles exhibit higher propensity for reversible two-electron oxidation, as displayed by isophlorin derivatives. He highlighted the synthesis, characterization by NMR and redox-properties of radicaloids. Sumon Jain, CSIR-Indian Institute of Petroleum, Dehradun presented the importance of developing high performance photocatalysts for CO_2 reduction using solar energy to tackle the issues of global warming and shortage of fossil fuels. The use of semiconductor-metal complex hybrids as photocatalysts, especially their immobilized form on supports such as TiO_2 and graphene was highlighted. Sanjoy Bandyopadhyay of IIT Kharagpur presented the role played by water in the single-stranded DNA binding (SSB) protein recognition of single stranded DNA through molecular simulation studies. He highlighted their findings on the presence of rigid thin water layer bridging the DNA and the protein.



N. Sathyamurthy and J.P. Mittal presenting the Certificate and memento to C.V. Ramana after his C.N.R. Rao National Prize for Chemical Research Lecture at NSC-21.

The session chair, A.V. Rama Rao briefly highlighted the importance of process chemistry in Indian Pharma. A thematic mini-symposium on Process Chemistry: Future directions was organized in session V.A.K.S. Bhujanga Rao, Natco Research Centre, Natco Pharma, Hyderabad, presented the process chemistry practices in the pharmaceutical industry and key attributes through case

studies. He emphasized that the scale-up and commercial scale-runs are key attributes and the Technology Transfer has to be carried out effectively to maintain the standards of the Indian Pharma Industry and lead. The second speaker in the session, T. Shekharam, CSIR-IICT, Hyderabad discussed the use of excipients in drug administration, and increasing their bioavailability. The excipients-based on N-vinyl pyrrolidone-based (copovidone and crospovidone) polymers developed at IICT was presented. Rakeshwar Bandichhor, Dr. Reddy's Laboratories Limited, presented an overview of current practices and future directions for Process R&D. He stressed upon the importance of cost-effective and protection-deprotection sequences in the process R&D, and the need to develop protection and deprotection-free synthesis by adopting route selection scientific guidelines. Swapnali Hazarika, CSIR-North East Institute of Science and Technology (NEIST), Jorhat, highlighted the role of membrane technologies in process chemistry for separation of chemicals and biochemicals. The membrane-based processes for separation and purification of biomolecules and racemic resolution of chiral molecules developed at CSIR-NEIST was highlighted.



A. V. Rama Rao presents a memento to Swapnali Hazarika (CSIR-NEIST) at NSC-21

D. Srinivasa Reddy, CSIR-NCL, Pune, emphasized the need for acceptable green processes for active pharmaceutical ingredients (APIs) which are cost effective and yield required quantity. On this line, he demonstrated convenient synthetic routes developed for Filbanserin, in their laboratory. Followed by this session the Poster session continued along with the lunch.

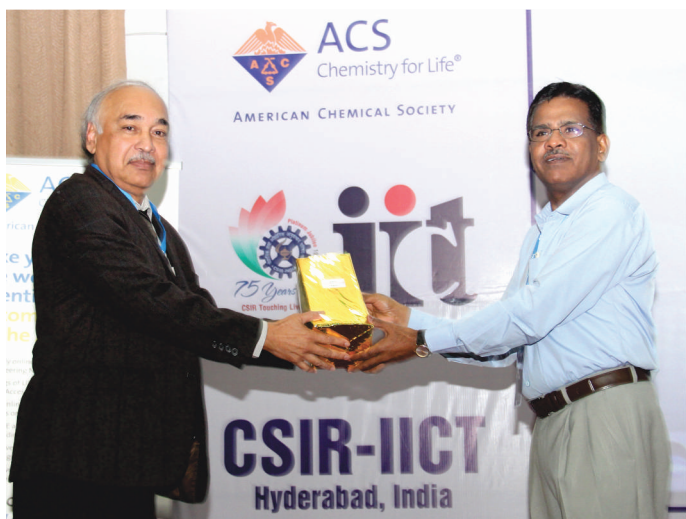
The medal lectures were continued in the post lunch-Poster session VI. The CRSI Award Lecture was delivered by Pradip Mascharak, University of California, USA. He presented the salutary effects of carbon monoxide (CO) in

NEWS AND ANNOUNCEMENTS



Poster session at NSC-21

various diseases and the intense ongoing research on the therapeutic benefits of this toxic gas in low doses (50-200 ppm). He described their work on the development of photosensitive CO-releasing molecules (photoCORMs), delivery and photo-release to kill the cancer cells. R. Murugavel gave the Silver Medal Lecture, on use of organic-soluble organophosphates as the primary building unit (PBU) to assemble polyhedral molecules which resemble secondary building units (SBUs) of zeolite. A rationalization of the building principles and use of some of these compounds as molecular magnets was presented. Rahul Banerjee, CSIR-NCL, Pune, in his Bronze Medal Lecture presented the porous framework materials especially, covalent organic frameworks (COFs) and their synthesis through organic terracotta process, stability and applications such as waste water treatment, drug recovery from organic solvents in pharma industries.



D. Ramaiah presents a memento to Pradip Mascharak, University of California, USA for the CRSI Medal Lecture at NSC-21.

First CRSI-ACS symposium started with the welcome remarks from CRSI and ACS representatives. Sourav Pal briefed on the MOU signed between CRSI and ACS and importance of the co-operation. The first lecture was delivered by George C. Schatz from Northwestern University, USA and Editor-in-Chief of Journal of Physical Chemistry (ACS). He presented self-assembled plasmonic structures with particular emphasis on DNA-linked

nanoparticles and their superlattices, and peptide amphiphiles. The second lecture was given by Susanta Mahapatra, University of Hyderabad on dynamics of chemical systems mediated by electronic excited states and electronic nondiabetic interactions.



ACS representatives with CRSI Immediate-past and present Presidents

In the next session, Brain S.J. Blagg from the University of Kansas, USA and Senior Editor of Journal of Medicinal Chemistry (ACS) presented design, synthesis and evaluation of new compounds against heat shock protein (Hsp90) which are implicated in many cancers. His group effort in the development of isoform-selective inhibitors to target Hsp90 and Grp94 was emphasized. Samrat Mukhopadhyay, IISER, Mohali presented intrinsically disordered proteins (IDPs) and their sequence-structure-function paradigm. He discussed intriguing behaviour of water in IDPs and how these results revealed a mechanistic aspect of aberrant protein aggregation. P. Shiv Halasyamani from University of Houston, USA and Associate Editor, Inorganic Chemistry (ACS) discussed nonlinear optical (NLO) materials and presented design and synthetic strategies for the synthesis of NLO materials for coherent deep-ultraviolet (DUV) light generation, as these materials have variety of applications in photolithography, atto-second pulse generation and advanced instrument development. Joyanta Choudhury from IISER, Bhopal presented his group research on stimuli-switchable catalysis for sustainable chemistry, for reversible energy (hydrogen) storage and delivery.



George C. Schatz delivering a lecture in CRSI-ACS symposium

NEWS AND ANNOUNCEMENTS

In the third session, Deqing Zhang, Chinese Academy of Science, China and the Co-Editor of ACS Omega introduce his group research on semiconducting properties of D-A polymers with variable functional groups and importance of polymer side chain engineering to achieve high semiconductor-performance. S. Sampath, IISC, Bengaluru introduced electrocatalysis, catalyzing the oxidation of small molecules such as methanol in fuel cells, oxygen evolution, kinetics and mechanism of interfacial reactions etc. He presented the development of new electrode materials of transition metal nitrides, carbides and chalcogenides. Followed by the technical sessions, an interactive session with ACS Editors and presentation for students was organized. This facilitated free discussion between the Editors and the students/researchers on various aspects of publishing in ACS journals. Finally, the meeting was concluded by the Deeksha Gupta, Managing Editor, ACS/ACS omega.



Interaction of ACS Editors with students and researchers

Minutes of the General Body Meeting (GBM) held in CSIR-IICT, Hyderabad

The President gave away medals to 2018 CRSI medallists who have attended the NSC-21. After the presentation of medals, items from the Council were discussed by the President. The GBM began with welcome remarks by the



N. Sathyamurthy presents the CRSI Silver Medal to R. Murugavel at NSC-21.

secretary, T. Govindaraju to all the members of the Society, during the NSC-and then Satish Patil, Secretary to present the activities of CRSI. Next, N. Sathyamurthy, the President, CRSI welcomed the new council members and thanked the outgoing Council members for their yeomen service to CRSI.

He presented the activities of CRSI and the local chapters, in organizing symposia, lectures etc. CRSI website and the detailed information such as newsletter, membership, activities, events, etc. were also presented to the GBM. Successful organization of NSC-20 at Gauhati University (Convener: P. Phukan) during February 2-5, 2017 and ACS-CRSI Meeting held at IISER Bhopal, on Jan 23, 2017 was brought to the attention of members. CRSI-ACES Cooperation was highlighted, and members were encouraged to publish in ACES journals (no publication charges and all are high impact journals). Subsequently, the audit report was presented by Satish Patil and P. Kaliappan, Treasurer, and the same was approved by the GBM.



General Body Meeting on February 15, 2017 during NSC-21 at CSIR-IICT, Hyderabad.

Next, various CRSI Medals and Prof. C.N.R. Rao National Prize in Chemical Research were presented to the awardees for the year 2017 by the President. The President also announced the Medals/Awards for the year 2018 to the members. The decision of the council to give 50% discount on life membership fee to students to encourage them to become members was announced by the President and endorsed by the GBM. This entails the new student member one free registration in the CRSI-National Symposium of Chemistry (NSC). Further, it was agreed to make it mandatory to become member to attend meetings and/or present posters. It was announced that information on various benefits such as discount in ACS/RSC membership etc. will be made available on the CRSI Website.

The President thanked S. Chandrasekhar, Director, IICT and Raji Reddy, Convener and his colleagues at IICT, Hyderabad for successfully organizing the CRSI-ACS and CRSI NSC 21 symposia and announced that CRSI NSC-22 (Convener: Kallol Kumar Ghosh) will be held at Pt. Ravishankar Shukla University, Raipur during 01-04 February 2018 and CRSI NSC-23 (Convener: Joyanta

NEWS AND ANNOUNCEMENTS

Choudhury) will be held at IISER, Bhopal during 13-15 July 2018. Finally, the GBM was concluded by thanking all the members.

On third day of the symposium, Session VII was dedicated to science education. P. Gangadhar Rao, University of Science and Technology, Meghalaya, presented his talk on Fun and joy of science: learning from experiences. He highlighted impact of S&T in the context of social, cultural and economic developments and S&T should be considered as separate entity but should be essential part of the developments. He also emphasized that younger generation must be taught to be open minded and at school level science should be taught such that students enjoy the subject and develop inquisitiveness.

Bronze medal lectures continued in the Session VIII. P. Thilagar, IISc, Bengaluru, presented his group work on design and development of novel luminescent materials with white light emissive characteristic in water. He also discussed interesting aspects of aggregation-induced emission and nanoaggregates for four-color cellular imaging applications. Jyothirmayee Mohanty, BARC, Trombay, presented curcubituril-based supramolecular functional assemblies, their molecular properties, and possible applications include aqueous-based dye laser, photo-functional devices, generator bed for radio-tracer separation and controlled drug delivery. Dilip Kumar, BITS Pilani, presented design and synthesis of bioactive azaheterocycles through C-H functionalization, oxidative cyclization, click chemistry, and metal-free arylation reactions. He also highlighted the use of the synthetic protocols to access 2-aryl indoles, heteroaryl carboxylates, arylquinonones, fused triazoles, oxazoles, oxadiazoles, thiadiazoles diarylsulfones, natural products and drug analogues. The cationic porphyrins were shown to have DNA intercalative properties and showed significant phototoxicity towards cancer cells. Finally, Maya Shankar Singh, Banaras Hindu University (BHU), Varanasi, presented α -enolic dithiester as a synthetic module to access diverse heterocyclic scaffolds. He explained their group research in exploiting the α -enolic dithiester for the construction of numerous bioactive scaffolds with substituents and skeletal diversity and the domino-strategies they have adopted involve methodical simplicity, structural diversity, short reaction times, and formation of multiple C-C and C-heteroatom bonds in a single operation.

The symposium was successfully convened by Raji Reddy under the guidance of S. Chandrashekar, Director, CSIR-IISCT, Hyderabad. The symposium is expected to have great impact for the Scientists, Professors and Researchers in Chemistry for collaboration, networking and exchange in exciting ideas across the country as well as in the region. In the concluding session, N. Sathyamurthy presented the best poster prizes to the

students (Navya Goli, Iruthayaraj Avinash, Neetu Yadav, Pronab Kundu, Lalit Kumar, Chirag Savani, Santosh K. Behera, Mohammed Hasan, Sandeep Bose, Raman Khurana, Annvareddi Naresh, Pritam Choudhury, Suushree Arpitabala, Mahesh Kutwal) sponsored by CRSI, Journal of Chemical Science, ACS, RSC and CSIR-IICT. Ramanuj Narayan gave the vote of thanks. The President, CRSI finally thanked the organizers (Conveners, Director CSIR-IICT, volunteers, organizing committees and all the participants for the successful meeting and concluded the event.

Lifetime Achievement Award

J. Gopalakrishnan delivered Lifetime Achievement Award lecture at IISc, Bengaluru on 10th March 2017. Some of the CRSI members from local institutions, faculty and students from IISc attended the meeting.



Sourav Pal and G. Mugesh presenting the Lifetime Achievement Award to J. Gopalakrishnan at IISc.

Highlights of the 22nd CRSI National Symposium in Chemistry (NSC-22) and 12th CRSI-RSC joint symposium

The 22nd National Symposium in Chemistry (NSC-22) was organized at Pt. Ravishankar Shukla University, Raipur, Chhattisgarh during February 2-4, 2018. The 12th CRSI-RSC joint symposium was held on February 1, 2018. These two meetings were convened by Kallol Ghosh. The purpose of this symposium was to provide a forum for the scientists, teachers and students in the country to participate and discuss the recent development in chemistry. The symposium was very well attended with over 350 registered participants and about 85% of them were young Ph.D. and Masters' students.

The inaugural session started with welcome remarks by Kallol Ghosh, Convener of the Symposium. He mentioned that the symposium is being organized for the first time in Chhattisgarh, has great significance and benefit to the students and researchers. S.K. Pandey, Vice Chancellor,

NEWS AND ANNOUNCEMENTS



Inauguration of NSC-22 and the release of the Abstract Book at Pt. Ravishankar Shukla University, Raipur

Pt. Ravishankar Shukla University, addressed the participants, highlighting the achievements of the University and mentioned that symposium will make a substantive contribution to the cause of research and development in the field of chemical sciences and interdisciplinary areas. He also invited the participants to experience the many social and cultural activities of Chhattisgarh. G. Mugesh gave the welcome address on behalf of CRSI and mentioned about the rapid increase in the number of participants in the annual meetings. C. N. R. Rao, Founder-President, made special remarks on this occasion. This was followed by presidential address and scientific lecture by N. Sathyamurthy, President, CRSI. In the end of inaugural session, M. K. Deb proposed vote of thanks.

The symposium comprised of various special, medal and award lectures, a mini theme symposium and two poster sessions. The second session started with a special lecture by C.N.R. Rao, Founder President, CRSI, who talked about inorganic graphene analogues. He discussed about MoS_2 , WS_2 , Gas and BN with special emphasis on few layer metal chalcogenides and BN with special emphasis synthesis and interesting physical properties. Fabrication of transistors and devices was highlighted. A new graphene-like material $\text{B}_x\text{C}_y\text{N}_z$ with high surface area and noel gas abortive properties was presented with excellent electrocatalysis activity. Novel materials obtained by functionalization or cross coupling of MoS_2 with other 2D materials was revealed. Furthermore, interaction of electron donor and acceptor molecules has unraveled the electronic structure and peoreties of phospherene. The covalent cross linking of C_3N_4 and MoS_2 favours photochemical splitting of water.

Challa Vijaya Kumar, University of Connecticut, USA, gave the CRSI Medal Lecture. He presented an update on bio-derived materials developed in his laboratory. He discussed biophosphors that emit white light, protein nanoparticles as alternative to quantum dots, graphene nanocomposites that outperform conventional materials in supercapacitors. A.K. Tyagi, BARC, Mumbai, presented his Silver Medal Lecture on chemist approach to rational design of functional materials. Some of the topics he described include materials with tunable band gap and

magnetic properties, tunable dielectrics and few lead free relaxor materials. The major focus of his talk was on the role of synthesis, novel properties exhibited by these functional materials and their crystallographic correlation. The first poster session was held after lunch and ~100 students and researchers enthusiastically presented their posters on their research work in all areas of chemistry.



C.N.R. Rao delivering a Special Lecture in NSC-22 at Pt. Ravishankar Shukla University, Raipur

After lunch and poster session I, Special and Medal Lectures followed in third session. Clement Sanchez, CNRS-UPMC, France delivered the C N R Rao Award Lecture on bioinspired integrative materials. He described hybrid inorganic-organic hybrid materials tailored forms and properties with applications ranging from catalysis, biocatalysts, photocatalysis etc. Overall, covered recent advances from his laboratory on integrative chemistry for nanostructures and hierarchical inorganic and hybrid materials and their properties.



N. Sathyamurthy presenting a certificate to Clement Sanchez after he delivered the C.N.R. Rao Award Lecture in NSC-22 at Pt. Ravishankar Shukla University, Raipur

NEWS AND ANNOUNCEMENTS

Jas Pal Badyal, Durham University, UK presented CRSI Medal Lecture on Functional nanocoatings for technological and societal applications. He highlighted the importance of functional coatings, its commercial market related to cleanliness of optical lenses, the feel of fabrics, the resistance of biomedical devices to bacteria, the speed of computer hard disk, and wear of car brakes among others. He described innovative solutions developed in his laboratory for functionalization of solid surfaces for applications include super-repellency, non-fouling, anti-fogging, thermoresponsive, rewritable bioarrays, opto-chiral, antibacterial, electrical barrier, water harvesting capture and release, oil-water separation and nano-actuation, all of which lead several industrial applications.



S. Chandrasekaran presenting a memento to Jas Pal Badyal after he delivered the CRSI Medal Lecture in NSC-22 at Pt. Ravishankar Shukla University, Raipur

Session III was followed the Pt. Ravishankar Shukla Memorial Lecture on the subject "Can India be a global Leader in Science?" delivered by C.N.R. Rao. In this thought provoking talk, he gave the overview of how Indian science changed over the years and what needs to be done to make India a global leader. The first day of the symposium was ended with by cultural programme performed by the student and faculty of Pt. Ravishankar Shukla University which show cased the cultural heritage of Uttarakhand.

The second day of the symposium started with Mizushima-Raman Lecture delivered by Kazuo Takatsuka, University of Tokyo, Japan. He gave introduction to theoretical foundation of molecular structure given by Born and Oppenheimer. Also discussed developments in femto- and atto-second ultrafast laser technology and the need for establishing a unified theory for coupled dynamics of electrons and nuclei. His group research on constructing a chemical framework of beyond-Born-Oppenheimer paradigm, termed as theory of nonadiabatic electron wavepacket dynamics or time-domain



Cultural Programme presented by the students and faculty of Pt. Ravishankar Shukla University at NSC-22.

quantum chemistry which explains the realm of chemistry that could not be seen in terms of traditional chemical theories. This was followed by bronze medal lecture by Anindya Datta, IIT-Bombay, Mumbai, who discussed fluorescent molecules and their applications in sensing and organic electronics. He presented strategies to enhance the emission of weakly fluorescent molecules through synthetic medication, by taking the example of Salophen and its Al and Zn complexes. Deepa Khushalani, TIFR, Mumbai, presented bronze medal lecture on coupling of energy capture and storage to generate integrated systems. Alternative strategy perused in her research group to couple energy capture and storage that minimize the interfaces leading to better performance and charge transfer efficiency was discussed. The silver medal lecture was delivered by R. Ramaraj, Madurai Kamaraj University, Madurai, who discussed chemically modified electrodes and their applications in the fields of electrochemistry and photoelectrochemistry as analytical sensors, reference electrodes, molecular electronics, transistors, electrical networks, catalysis and solar energy conversion. His group research on molecules and nanostructured materials modified electrodes and their applications was presented. In session V, C.N.R. Rao National Prize for Chemical Research was delivered by J.K. Berra, IIT Kanpur, who discussed the role of water in organometallic catalysis. Importance of bringing a catalytically relevant water molecule from bulk to the vicinity of the metal center



Kazuo Takatsuka delivering the Mizushima-Raman Lecture in NSC-22 at Pt. Ravishankar Shukla University, Raipur

NEWS AND ANNOUNCEMENTS

was highlighted. Carefully designed ligands in his research group that cooperatively compensates for the loss by hydrogen-bond interaction with water molecule to promote nucleophilic attack by water was demonstrated through various organic transformations such as nitrile hydration, olefin oxygenation and alcohol oxidation to acid.

A thematic mini-symposium on “New approaches to address bio-geo environmental pathways of chemical pollutants” was organized in session VI. Vinayak Sinha, IISER, Mohali, discussed history of the Earth’s atmosphere to its present state, highlighting the key biotic, physical and chemical drivers. He presented recent findings from his group obtained through new measurement techniques and data concerning the annual phenomenon of agricultural waste burning in the North-West Indo Gangetic Plain (N.W. IGP). Quantifying the total OH reactivity of ambient air is a direct measure of the total reactive pollutant burden and yield the fraction of unmeasured reactive VOCs in the atmospheric environment. He showed that a very significant fraction of chemically reactive compounds present in ambient air due to the agricultural fires remains unaccounted and larger suite of compounds and chemical reactions needs to be considered for improved understanding of the atmospheric chemistry-air quality-climate feedbacks similar to biomass-fire impacted atmospheric environments around the world. S.K. Goyal, CSIR-NEERI, New Delhi, presented various aspects of and challenges in developing green chemistry and technologies for sustainable developments. Emphasized the role of scientists and engineers to develop technologies that use fewer resources and generate more useful products while minimizing the generation of waste or transforming the waste to some other useful products through green chemistry and engineering. Suresh Tiwari, Indian Institute of Tropical Meteorology, Pune, discussed Carbonaceous aerosols over the northern part of India and impact on regional climate change. Assessment of atmospheric aerosols and its chemical composition in the South Asia is essential where the highest levels of carbonaceous aerosols emission is observed. His group study indicates that the policy level changes required to mitigate the excess carbonaceous aerosol in the region, especially during post-monsoon and winter seasons. Sarath Guttikunda, Urban Emission Info, Delhi discussed ways to fill the knowledge gap on air quality in Indian cities and emphasized importance of such exercise. The second poster session was held along with lunch and >100 students, postdocs and researchers enthusiastically presented their posters on their research work in all areas of chemistry.



Poster Session at NSC-22

The bronze medal lectures continued in the post lunch-Poster session VI. Sripada S. V. Ramasastry, IISER, Mohali, discussed importance and challenges in the construction of annulated cyclopentanes and presented his group research on organocatalytic approaches for the synthesis of cyclopentane-fused arenes and heteroarenes. Satrajit Adhikari, IACS, Kolkata, discussed formulations of Born-Oppenheimer (BBO) methodology from first principle for the construction of diabatic potential energy surfaces for spectroscopic and scattering process. He also presented his group research on reactive scattering dynamics on the diabatic and diabatic surfaces for H_3^+ system and optical spectra of $REMnO_3$ compounds which showed anomalous temperature dependence around the Neel temperature. Emphasized that results from these theoretical works may explain the experimental due to excitations of the quantum rotors. K.R. Justin Thomas, IIT Roorkee, gave overview of organic materials and their application as emitting semiconductors in organic light-emitting-diodes and light-harvesters in photovoltaics. He presented strategies developed in his laboratory for the synthesis of organic materials based on donor-acceptor compounds containing carbazole moieties. The carbazole donor or linkers were utilized to generate a series of organic dyes which find use as sensitizers in photovoltaics or emitting dopants in organic light-emitting diodes. In session VII, G. Vijay Nair, CSIR-NIIST, Thiruvananthapuram, delivered lifetime achievement award/gold medal lecture. This lecture covered the journey of Vijay Nair over several decades in the development of novel reactions and methodologies for the formation of carbon-carbon and carbon-heteroatom bonds, which is central to organic chemistry. Importance of organic reactions involving cations and zwitterions in the synthesis of novel hetero and carbocyclic compounds was emphasized. In particular, multicomponent reactions and NHC organocatalysis were highlighted.



N. Sathyamurthy presenting the Lifetime Achievement Award to Vijay Nair at NSC-22, Pt. Ravishankar Shukla University, Raipur.

The medal lectures continued on third day of the symposium. In session VIII, silver medal lecture was delivered by C. Pulla Rao, IIT Bombay, Mumbai, who discussed inorganic-protein

NEWS AND ANNOUNCEMENTS

hybrids and their diverse nanostructures through protein-metal ion interactions. His group research on α -helical and β -sheet containing lectins and albumins, their interactions with transition and heavy metal ions, nanostructure formation, characterization and various applications. Pawan K. Sharma, Kurukshetra University, Kurukshetra, presented various therapeutic methods and importance of selective targeting of mRNA and different antisense approaches in his bronze medal lecture. He also presented his group research on double-headed nucleosides which have potential develop novel therapies. Alakananda Hazra, Visva-Bharti University, Santiniketan described the role of heterocycles in drug development and presented his group research on the development of new synthetic strategies for heterocycles. In particular, synthetic methodologies to access imidazopyridine, an important constituent of drugs like zolpidem, alpidem, zolimidine, necopidem and saripidem, and its derivatives was presented.

In session IX, bronze medal lecture was presented by Aniraban Misra, University of North Bengal, Darjeeling. He gave overview to the aromaticity across aromatic molecules include polyaromatic hydrocarbons, heterocycles, and all metal aromatic systems and described his group research on aromaticity manifested in exo-cyclic conjugation to attain the magic number to form the aromatic sextet. Kumaresh Ghosh presented bronze medal lecture on development of pyridine and benzimidazole based molecular scaffolds for selective ion sensing applications. Formation responsive supramolecular gels through hydrogen bonding and charge-charge interactions, by quaternization of pyridine and benzimidazole ring nitrogen was described.

The symposium was successfully convened by Kallol Ghosh with support from K. Pandey, Vice Chancellor, Pt. Ravishankar Shukla University. The symposium is expected to have great impact for the Scientists, Professors and Researchers in Chemistry for collaboration, networking and exchange in exciting ideas across the country as well as in the region. In the concluding session, N. Sathyamurthy presented the best



N. Sathyamurthy presenting poster Award to one of the poster award winners at NSC-22, Pt. Ravishankar Shukla University, Raipur.

poster prizes (Pallabi Basuri, Nidhi Patel, Suparna Paul, Manju Bala, Geethika M, T. Mageshwaran, Arvind Kumar Sahu, Aditya Bhattacharya, Imran Kazi, Yamini Thakur, Deepa Oberoi, Vikranth Thaltiri, M. Thennila, Manindranath Bera, Sourav Samanta, Sagarmani Rasaily) to the students sponsored by CRSI, Journal of Chemical Science, ACS, and RSC, and named after G. Mehta, Bhasker G. Maiya and R. K. Barua. Kallol Ghosh gave the vote of thanks.

The President, CRSI finally thanked the organizers (Convener, Vice Chancellor, Pt. Ravishankar Shukla University, volunteers, organizing committees and all the participants for the successful meeting and concluded the event.



Organizing team of NSC-22, Pt. Ravishankar Shukla University, Raipur.

Highlights of the 12th CRSI-RSC Joint Symposium

The 12th CRSI-RSC joint symposium in chemistry was held on February 1, 2018. The symposium was inaugurated with the welcome address by N. Sathyamurthy, President CRSI and remarks by Harp Minhas, Royal Society of Chemistry, London. N. Sathyamurthy and Harp Minhas highlighted that the joint symposium sustained over years and promote collaboration between scientists from India and the UK, and benefit students from both the countries. The first invited lecture was delivered by Hywel Morgan, University of Southampton, UK. He talked about the development of integrated microfluidic analytical systems that exploit the in expensive consumer electronics found in the mobile phone displays to develop programmable digital microfluidic (DMF) systems. The DMF are programmable for droplet size, volume and perform as flexible assay platforms to support wide range of chemical and biochemical assays.

Following this lecture, Biman Bagchi, IISc, Bengaluru discussed his work on modernizing classical physical chemistry and physical biology. Most of the systems in chemistry and biology are complex, and the common solvent water shows multiple anomalies that are difficult to understand. How modern efforts based on statistical mechanics and computer simulations have led to deeper understanding of the problems of classical physical chemistry, related to binary mixtures, aqueous electrolyte solutions, biological water and protein folding dynamics.

In the next session, T. Govindaraju, JNCASR, Bengaluru talked about Alzheimer's disease in terms its multifactorial nature, global impact and his group research on multipronged approach to develop therapeutic agents for multifaceted toxicity in Alzheimer's disease. Vinod K. Singh, IISER, Bhopal,

NEWS AND ANNOUNCEMENTS



Remarks by Harp Minhas, RSC at 12th CRSI-RSC joint symposium.

discussed on enantioselective synthesis of heterocyclic compounds with potential biological activity. The enantioselective approaches developed in his group for the synthesis of chiral skeletons containing isoindolinone, lactone and cyclohexane ring systems was described and application of these approaches in the tandem syntheses processes was highlighted. V. Chandrasekhar, TIFR, Hyderabad, described NHC-stabilized hydrophosphasilenes, hydrosilamines and NHC-assisted reactivity of diphosphene. Emphasized the importance of sterically encumbered groups to kinetically stabilize the compounds containing multiple bonds between main-group elements. The hetero-elements containing Si=N or Si=P are interesting owing to the electronegativity difference between Si and N or P. Synthesis of these compounds through dehydrohalogenation was described. He also discussed the addition of H₂O across multiple bonds and reactivity of P=P system and NHC-CAAC triazaalakenes in three different oxidation states. In the post-lunch session III, Serena Corr, University of Glasgow, UK, talked about microwave-assisted synthesis routes to functional materials. Preparation of nanostructured electrodes and solid electrolytes for safer, high energy



Hywel Morgan presenting a memento to Serena Corr at 12th CRSI-RSC joint symposium.

density all solid-state batteries and garnet and NASICON-type electrolytes for all solid-state batteries was presented. The results on lithium diffusion processes and magnetic ordering etc. in the nanoparticles studied by employing several techniques such as muon spin relaxation, total scattering methods, and x-ray absorption spectroscopy was described. Ashok K. Ganguli, IIT Delhi, discussed solar energy conversion and electrochemical fuel generation through the design of efficient nanostructured materials. He presented his group research on 2D materials, metal oxides, metal chalcogenides and alloy nanostructures for photoelectrochemical water splitting, photocatalytic organic pollutant degradation, and photocatalytic fuel generation and water purification. The 12th CRSI-RSC joint symposium ended with concluding remarks from the President CRSI and vote of thanks.

Minutes of the General Body Meeting (GBM) held in Pt. Ravishankar Shukla University, Raipur.

The President welcomed all the members to the GBM. The minutes of the GBM from NSC-21 was mentioned and approved by the members. G. Mugesh, Secretary General, presented the activities of CRSI and the local chapters, in organizing symposia, lectures etc. CRSI website and the detailed information such as newsletter, membership, activities, events, etc. were also presented to the GBM. Successful organization of NSC-20 at Gauhati University (Convener: P. Phukan) during February 2-5, 2017 and ACS-CRSI Meeting held at IISER Bhopal, on Jan 23, 2017, NSC-21 and 1st CRSI-ACS symposia at ICT, Hyderabad (Convener: Ch. Raji Reddy) were brought to the attention of members. CRSI-RSC and CRSI-ACES Cooperation (ACES Journals) were highlighted.



CRSI General Body Meeting on February 03, 2018 during NSC-22 at Pt. Ravishankar Shukla University, Raipur.

Next, various CRSI Medals and Prof. C.N.R. Rao National Prize in Chemical Research were presented to the awardees for the year 2018 by the President. The decision of the council to continue with 50% discount on life membership fee to students was endorsed by the GBM. The formation of the Chhattisgarh CRSI Local Chapter was approved by the GBM.

- The Council decision to have two categories of corporate membership (Corporate Platinum (5 lakhs, 5 free

NEWS AND ANNOUNCEMENTS

memberships) and Corporate Gold (3 lakhs, 3 free memberships) was endorsed by the GBM.

- The Council suggestion to request the organizers (conveners) of forthcoming CRSI-NSC symposia to contribute excess funds, if any, to CRSI and wherever this amount is 1 lakh or more, the institution will be granted CRSI-Institutional membership, was endorsed by the GBM.
- Proposal to institute R.K. Barua Memorial Poster Award by the Society for Chemical Education, Assam and ACS poster prizes including one Langmuir prize was endorsed by the GBM.

The President thanked Kallol Ghosh (Convener) and Pt. Ravishankar Shukla University for hosting NSC-22 and 12th CRSI-RSC symposia and announced that CRSI NSC-23 (Convener: V. K. Singh) will be held at IISER, Bhopal during July 13-15, and the 24th CRSI-NSC and 13th CRSI-RSC symposia will be organized by the Central Leather Research Institute (CLRI), Chennai during Feb 7-10, 2019 with Dr V. Subramanian as the Convener. J. Chowdhury of IISER Bhopal made a brief presentation and invited the members to the 23rd CRSI NSC meeting to be held in IISER Bhopal during July 13- 15, 2018. Finally, the GBM was concluded by thanking all the members.



N. Sathyamurthy presents Prof. C. N. R. Rao National Prize in Chemical Research to J. K. Berra, IIT, Kanpur, during the GBM at NSC-22, Pt. Ravishankar Shukla University, Raipur

Activities of Local Chapters

The CRSI Rajasthan Chapter (Conveners: Anshu Dandia, Neelima Gupta and Raakhi Gupta) undertook several activities for the promotion of chemistry education and chemical research with the support of CRSI life members and CRSI Medal awardees. The Rajasthan Chapter actively contributed to the two days International Conference on “Frontiers at the Chemistry-Allied Sciences Interface” organized by Neelima Gupta during July 22-23, 2017 at the Centre of Advanced Study, Department of Chemistry, University of Rajasthan, Jaipur. Former CRSI President Goverdhan Mehta inaugurated the conference attended

by more than 350 delegates and delivered the keynote address on “Future of Chemical Sciences”.



Goverdhan Mehta and Ganesh Pandey in Inaugural session of the International Conference on “Frontiers at the Chemistry-Allied Sciences Interface” organized at University of Rajasthan, Jaipur at University of Rajasthan.

Ten plenary speakers included former CRSI president S. Chandrasekaran, CRSI Silver Medal Awardees- V.K. Singh, IISER Bhopal, Ganesh Pandey, CBMR Lucknow, A.K. Tyagi, BARC, D. Basavaiah, University of Hyderabad and Anamik Shah, Gandhinagar, Lallan Mishra, BHU, A.K. Srivastav, Mumbai, Jacques Jupille, CNRS UPMC, Paris.



Participants at “Frontiers at the Chemistry-Allied Sciences Interface” organized at University of Rajasthan, Jaipur at University of Rajasthan.



Sourav Pal delivering a Special Lecture on Science Education and Research for Future: Challenges and Opportunities” in the University of Rajasthan.

NEWS AND ANNOUNCEMENTS

In addition to the fifteen short invited lectures, twenty-five oral and 200 poster presentations were also made by research scholars and young faculty. A Public Lecture on “Researches in Herbal Medicine and Perspective of Ayurveda” by Vaidya Rajesh Kotecha, Special Secretary, Ministry of AYUSH, Govt. of India was jointly organized with the Centre of Advanced Study in Chemistry, University of Rajasthan, Jaipur on 14th September, 2017.

A two days workshop on “Stereochemistry and Reaction Mechanism” was also organised in collaboration with Centre of Advanced Study in Chemistry, University of Rajasthan on 21 & 22 March, 2018. Among other activities of CRSI Rajasthan Chapter, a Motivational Talk on “Chemistry for Better Future” by A.K. Tyagi, Head, Nuclear and Energy Materials Section, Chemistry Division, BARC was organized on 10 March, 2018. A Special Lecture of CRSI past president Sourav Pal on “Science Education and Research for Future: Challenges and Opportunities” was organized on 26th April, 2018 in the University of Rajasthan, which was attended by more than 200 faculty members and students of various Science Colleges, Institutes and Universities of Jaipur.

The CRSI-Trichy-Madhurai Chapter (Conveners: M. Palaniandavar and Ramaraj) organised a CRSI sponsored one day national seminar on “Recent trends in chemical Sciences” on February 23, 2018 at Sri Ramakrishna College of Arts and Science. The prime objective of the seminar is to give exposure to the student’s community to enrich the knowledge on the emerging trends in chemical science. The seminar also aims in enlightening the interdisciplinary science in the interesting areas of engineering, medicine, bioorganic and bioorganic chemistry. Each session is designed to address a broad set of scientific and technical themes related to interdisciplinary approaches in recent fields of science. The purpose of the seminar is to provide a platform for the young student and researchers to explore recent advancements in chemical science.



Inauguration of “Recent trends in chemical Sciences” at Sri Ramakrishna College of Arts and Science, Coimbatore.

Seminar Deliberations. On 23rd February 2018, Department of chemistry, Sri Ramakrishna College of Arts and Science, joined hands with CRSI and conducted one day national

seminar on “Recent trends in chemical Sciences”. Around 90 students from other colleges participated in the seminar. The Seminar was sponsored by Chemical Research Society of India (CRSI).

The seminar was started at 10.00 a.m. with a Prayer Song, followed with a Welcome address and Inaugural address by T. Sasikala, Head (i/c), Department of Chemistry. Presidential address was given by K. Karunakaran, Principal and Secretary followed by Felicitation Address rendered by F. Hannah Revathy, Dean, School of Science & Humanities. The Convener of the seminar was M. Palaniandavar, Professor, School of Chemistry, Bharathidasan University, Trichy. S. Muthusamy, Former Head, School of Chemistry, Bharathidasan University gave the keynote address for the gathering. The dignitaries on the dais started the function with lightning of kuthuvilakku as a traditional start up. The Introduction about the chief guest was delivered by S. Muthulingam, Assistant Professor, Department of Chemistry. S. Muthusamy Former Head, School of Chemistry, Bharathidasan University emphasized the theme of the seminar and about the theme of the workshop.



One of the talks at “Recent trends in chemical Sciences” at Sri Ramakrishna College of Arts and Science, Coimbatore.

In the first session, S. Muthusamy delivered a lecture on Stereochemistry of organic molecules. The participants had very good interactive discussion session with the Chief Guest and the doubts, queries were cleared. R. Loganathan, Post-Doctoral Research Associate, Purdue University, US delivered a lecture on Apoptosis inducing metal complexes for the treatment of Cancer. Finally lecture on Metal-dioxygen species in biology was delivered by K. Sundaravel, Assistant Professor, Department of Chemistry, Bharathiar University, Coimbatore. After the discussion session, the feedbacks were made filled and collected by the volunteers and got more valuable feedback. Also some of the participants shared their experience about the workshop on stage. Certificates were issued to all the participants who participated in the workshop.

CRSI-Asian Chemical Editorial Society Cooperation:

CRSI is a member of the Asian Chemical Editorial Society (ACES), a unique association of thirteen major chemical

NEWS AND ANNOUNCEMENTS

societies of Asia and the Pacific regions. ACES, in collaboration with Wiley-VCH, publishes top-quality journals in chemistry with an international readership. ACES was founded in 2005 and currently publishes two major journals in chemistry: Chemistry - An Asian Journal (CAJ) and Asian Journal of Organic Chemistry (AJOC). The participating societies of ACES and Wiley-VCH are committed to provide scientific excellence, high publishing ethics and highest standards in publications. CAJ is supported by ChemPubSoc Europe, German Chemical Society (GDCh) and Federation of Asian Chemical Societies (FACS). CAJ has become a top chemistry journal. Through its co-ownership of CAJ and AJOC, the CRSI is strengthened by each article that gets published in either ACES journal and can in turn do more to support the chemical community in India. In addition, CRSI members get special benefits, including reduced rates for personal subscriptions to ACES journals.



ACES, in collaboration with Wiley-VCH, now publishes three international journals, Chemistry - A Asian Journal, Asian Journal of Organic Chemistry and ChemNanoMat.

CRSI Membership

For membership applications or related queries, please write to: G. Mugesh, Department of Inorganic & Physical Chemistry, Indian Institute of Science, Bengaluru 560012, Tel: +91-80-2360-2566; Fax: +91-80-2360-2566; Email: mugesh@iisc.ac.in or Raji Subramanyam, Email: raji.subramanyam@gmail.com.

One can become a lifetime member of CRSI by paying Rs. 10,000/- (Rs. 5000/- for students) as membership fee. The payment can be made by electronic transfer or demand draft. Details can be found at the CRSI website (<http://www.crsi.org.in>).

Special discount for students: If a student becomes a Life Member of the CRSI after paying Rs. 5000.00 (discounted fee), his/her registration fee will be waived for the corresponding CRSI National Symposium in Chemistry (NSC). It is mandatory for the students to become a Life member of CRSI to attend meetings and present posters. For example, the students who would like to participate in the 23rd CRSI

National Symposium in Chemistry (CRSI-NSC-23) at IISER Bhopal during July 13-15, 2018, should become members of the society before registering for the symposium. A copy of the membership payment receipt (obtained from CRSI) should be uploaded during the registration or sent to the Convener, CRSI-NSC-23 to avail the fee waiver.

A Lifetime Membership card will be sent to all the student members and they can avail the membership benefits such as discount on the registration fee etc for all future CRSI conferences. A copy of the CRSI Newsletter, information about joint symposia etc will also be sent to them.

An Institutional Member is one who makes a one-time contribution of an amount of not less than Rs. 1 lakh as donation to the Society. Once enrolled as a member, the Institution will be invited to participate in the CRSI annual and mid-year meetings and will be given a special discount on the registration fee. Every Institutional Member can nominate a maximum of three persons to be members of the General Body in any given year and to participate in the annual and mid-year meetings of the Society. The nominated members will be treated on par with the "Life Members" of CRSI. The Institution will also receive information about various activities of CRSI and three copies of the annual newsletter.

The names of the Institutional members will be prominently displayed in the website of the Society and important activities of the Institution related to chemistry will be published in the CRSI newsletter.

A Corporate Member is one who makes a one-time contribution of an amount of not less than Rs. 5 lakhs as donation to the Society. Once enrolled as a member, the company will be invited to participate in the CRSI annual and mid-year meetings and will be given a special discount on the registration fee. Every Corporate Member can nominate a maximum of three persons to be members of the General Body in any given year and to participate in the annual and mid-year meetings of the Society. The nominated members will be treated on par with the "Life Members" of CRSI. The company will also receive information about various activities of CRSI and three copies of the annual newsletter. The names of the Corporate Members will be prominently displayed on the website of the Society with a link to the Company.

The Chemical Research Society of India has been granted with effect from 26/01/99 the status of Wholly Charitable Trust (certified under section 12A(a) of the Income Tax Act of 1961).

© 2018. Published by the Chemical Research Society of India

