Bridging Gaps in Discovery and Development: Chemical and Biological Sciences for Affordable Health, Wellness and Sustainability

15th ISCB INTERNATIONAL CONFERENCE (1SCBC-2011)

Hotel Grand Bhagwati**,** Rajkot India, 4th-7th February, 2011

To Commemorate 2011 as the International Year of Chemistry, Indian Society of Chemists and Biologists, India has organized its 15th International Conference on "Bridging Gaps in Discovery and Development: Chemical and Biological Sciences for Affordable Health, Wellness and Sustainability" at Hotel Grand Bhagwati**,** with association of Saurashtra University, Rajkot India from4th-7th February. Prof.Anamik Shah, President of ISCB was organizing secretary of this conference. Prof. Nicole Moreau, President, International Union of Pure and Applied Chemistry and Secretary General of the Comite National de la Chimie, ,CNRS,France was chief guest of the function. The four days scientific programs includes 52plenary lectures, 24 invited lectures by the eminent scientists and 12 oral presentations were scheduled. 317 posters were presented by young scientists and Ph. D. students in three different poster sessions. Several Scientists have presented their work on Drug Research, Chemical Sciences, Bionanotechology, material science, Chemical Biology, Glycobiology, Biochemistry.

Approximately 750 delegates from India and abroad including places viz. United States, United Kingdom, France, Switzerland, Germany, Austria Belgium, Sweden, Japan have participated this conference. Most of speakers have presented their work of current interest. Many of talks highlighted synthesis, structure activity relationship, current trends in medicinal chemistry and drug research. A brief selection of highlights is discussed here.

Antibacterial Screening of Natural and synthetic products

Prof. Nicole Moreau , President International Union of Pure and Applied Chemistry and Secretary General of the Comite National de la Chimie, ,CNRS,France has delivered her lecture in this conference . In field of antibacterial agents she has developed medium throughput screening system in order to find molecules,from natural substances or synthesis against resistant bacteria.

Medicinal Chemistry, an evolving discipline

Prof.H.Timmerman, VU University Amsterdam during his lecture highlighted importance of medicinal chemistry. In his presentation he covered historical aspect of medicinal chemistry with his personal opinion about coming developments. He suggested that medicinal chemistry training, teaching very important among new researchers for better understanding of medicinal chemistry.

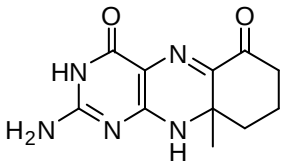
India providing a solution for Pharma R&D productivity issues: beyond cost arbitrage and other common considerations

Dr.Rashmi Barbhaiya, CEO & Managing Director, Advinus Therapeutics Ltd, Bangalore in his presentations presented that widening gap between R&D spending and productivity is no longer sustainable. The industry has no choice but look alternate models. Country from immerging market may offer solution. The cost arbitrage is an obvious advantage that a country like India will offer. The current climate for R&D in India may offer something above and beyond cost arbitrage.

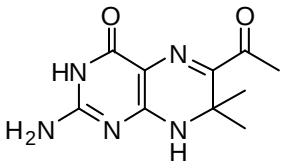
Dr.B.K.Tivedi, CSO,Wockardt,Aurangabad,India has presented present scenario of drug research in India.

Heterocyclic chemistry at the edge of Biology and medicine-past present and future of Wsg1060

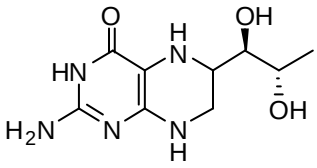
Professor Colin J Suckling (University of Strathclyde,Glasgow, UK) has discussed Wsg1060 is a member of a family of so-called blocked dihydropterins first synthesised at Strathclyde in the 1970s in a project initiated by the late Professor Hamish Wood aimed at the discovery of inhibitors of folate biosynthesis as potential antibacterial compounds. Apart from its unusual tricyclic structure, wsg1060 did not show any remarkable properties although its simpler bicyclic analogue, wsg1002, was shown to be synergistic with methotrexate in antibacterial assays. With one exception, a cyclopropane-containing irreversible inhibitor of dihydrofolate reductase chemistry of this class of compounds lay dormant until the mid-2000s by which time it was well established that tetrahydrobiopterin BH_4 is the naturally occurring cofactor for several oxidation reactions including aromatic amino acid biosynthesis and nitric oxide synthesis. All of these reactions have been implicated in a number of pathologies.



wsg1060



wsg1002



tetrahydrobiopterin

During his lecture he presented activation of nitric oxide synthases by analogues of BH_4 , we have shown that a number of blocked dihydropterins including both wsg 1002 are activators of iNOS in macrophages and eNOS in endothelial cells .He has discussed in vivo studies that suggest that blocked dihydropterins may have a role as drugs to treat cardiovascular disorders. He also informed that the original reasons for making wsg1060, it has been re-evaluated in antibacterial assay in collaboration with Professor Andrew Hanson (Florida, USA) and found to be effective against *E. coli*. New leads against Gram negative bacteria are rare. Wsg1060 has thus become a key compound with potential to stimulate new drug discoveries in more than one important

Prof. Domenico Spinelli**,** University of Bologna, Italy has presented chemistry and bioactivity of new heterocyclic molecules.

Total synthesis of bioactive natural products and designed structural analogs

Prof.Gree Rene (Director, CNRS, France) has discussed new transition metal-catalysed interconversion of sugars into fuctionalised and chiral carbocycles. He presented corresponding cycloalkenones are very useful intermediate in the synthesis of various bioactive molecules. He also reported synthesis of natural product nikkomycin and funebrine as well as aminocyclitol compounds. He also reported Embelin analogs activity against as anticancer, antibacterial, anthelmintic.

Opportunities and Challenges in Natural Product Synthesis for Drug Discovery

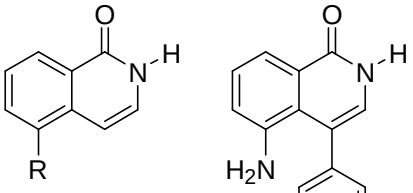
Dr. J. S. Yadav (Director, Indian Institute of Chemical Technology, Hyderabad) has presented that Natural products play very critical role in drug discovery. He highlighted that over 130 drugs which are introduced in the market in the last few decades from natural sources. Also over 70% world population depends on crude plant drug preparations, which is nothing but combination of several natural products single entities. Also several natural product analogues and derivatives have been introduced by various pharmaceutical industries for example, camptothecin and its derivatives taxol and its derivatives, compactin and its derivatives besides several others. He presented contribution of his group in development of methodologies in the form of green protocols and Chiron approaches .

Metal-Catalyzed C-H Bond Functionalizations for Sustainable Synthesis
Prof. Lutz Ackermann (Institute of Organic and Biomolecular Chemistry, Georg-August-University, Germany) presented copper catalyzed reactions for efficient direct arylation (hetero) arenes.
Prof Ronald Jordan,(Department of Biomedical and Pharmaceutical Sciences,College of Pharmacy,University of Rhode Island, USA) has discussed use of biopharmaceutical production green ,efficient technology.
Dr.Mukund S. Chorghade (President and CSO of THINQ Pharma ,USA) has discussed reverse pharmacology and system approaches for chemical biology.

Prof. Dr. Ulrich Jordis,Vienna University of Technology,Inst. of Applied Synthetic Chemistry,Austria has presented Synthesis and SAR of new glycyrrhetinic acid derived derivatives as 11β-hydroxysteroid dehydrogenase inhibitors. Application of inhibitors of 11β-hydroxysteroid dehydrogenase-1 can be useful against obesity and diabetes while 2 can be active against chronic inflammatory activity and certain form of cancer.
Prof. Mulchand S. Patel (Department of Biochemistry,School of Medicine and Biomedical Sciences,University at Buffalo (UB), USA) has discussed about Human Pyruvate Dehydrogenase Complex and their Structure-Function Relationship and Regulation.

Isoform-selective inhibitors of PARP-2: design, synthesis and evaluation

Prof.Michael D. Threadgill (Medicinal Chemistry, Department of Pharmacy & Pharmacology, University of Bath, UK) has presented PARP-2 is a poly(ADP-ribose) polymerase, with some activities similar to those of PARP-1 but with other distinct roles. Non-isoform-selective inhibitors are in clinical trial for the treatment of cancer. Isoform-selective inhibitors would enable studies on the specific roles of PARP-2 in the mammalian cell. He discussed a series of isoquinolin-1-ones (1-4) as selective inhibitors of PARP-2, using the X-ray structures of the isoforms.



1: R = NH_2
2: R = NHCOPh
3: R = $(CH_2)_2CO_2H$ **4**

The most selective PARP-2 inhibitors were **2** and **4** and showed greater selectivity than a reported lead 5-aminoisoquinolin-1-one **1** in a comparative study.

Prof.Keykavous Parang(Medicinal Chemistry and Pharmacology,Department of Biomedical Sciences,University of Rhode Island,USA) has presented Peptide Nanostructures as Molecular Transporters of Therapeutic Agents.
Prof.Ajayan Vinu (International Center for Materials Nanoarchitectornics, NIMS, Tsukuba, JAPAN) has presented Fabrication and the Applications of Hierarchically Ordered Nano/Macroporous Films and Powders.He has discussed new concept of making nanoporous carbon nitride materials via hard templating approach in which nanoporous silica was used as template.

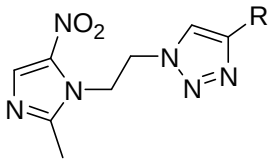
Prof. Erik Van der Eycken (Katholieke Universiteit Leuven,LOMAC,Belgium) has delivered his lecture and discussed benefits of microwave irradition in heterocyclic chemistry.
Dr.Dorothy Philips (Director,Strategic Marketing,Water Limited,MA,USA) has presented Ultra – Performance Liquid (UPLC)Technology use for complete characterization of protein-Based biotherapeutics.
Prof. Sartaj Tabassum, (Department Of Chemistry, Aligarh Muslim University, Aligarh) has presented metal based macro to nano chemotherapeutics.
Dr.Raj Rajur, (Chairman & CEO, CreaGen Biosciences, USA) has discussed about importance of collaborative drug discovery efforts to overcame gap between chemistry and biology.
Prof.Geoge O,dOherty presented synthesis of biologically important carbohydrate scaffold.
discussed

New Perspectives in cancer chemotherapeutic Drug Design: Effect of metal ions, ligand topology and chiral discrimination

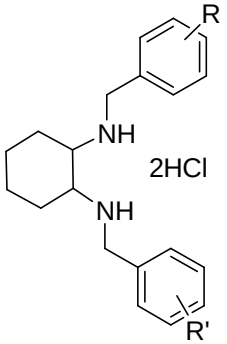
Prof.Farukh Arjmand (Department Of Chemistry, Aligarh Muslim, University, Aligarh) in her lecture highlighted that ligand topology plays key role in the design of cancer chemotherapeutic agents. Metal based drugs are more specific-target oriented, due to their tunable electronic and redox properties, DNA binding ability, relatively high affinity for nucleobases.

Synthesis and Antimicrobial Activity Evaluation of Cyclohexane-1,2-and 1,3-diamine Derivatives and Metronidazole–Triazole Conjugates

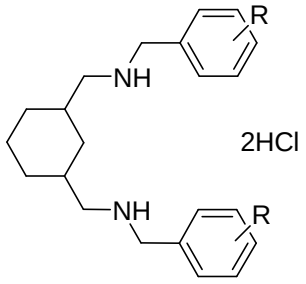
Prof.Diwan Singh Rawat **(**Dept. of Chemistry,University of Delhi) has discussed synthesis of metronidazole-and triazole conjugates and Cyclohexane-1,2-and 1,3-diamine derivatives as anti-infectious agents against protozoa such as *Trichomonas vaginalis*, *Entamoeba histolytica*, *Giardia intestinalis*, and infections caused by Gram-negative and Gram-positive anaerobes and bromhexine molecule, a mucolitic agent used in the treatment of respiratory disorders associated with viscid or excessive mucus. He highlighted structural modification of these two classes of compounds leads to discovery of potent antimicrobial agents. The detailed synthetic methodology and antimicrobial activity of these compounds was presented during talk.



IC_{50} = 0.003-0.67µg/mL



IC_{50} = 0.0005-0.25 µg/mL



IC_{50} = 0.0006-0.4618µg/mL

Dr. K.S. Jain (Sinhgadh College Of Pharmacy, Pune) has discussed multicomponent reactions to synthesized bioactive heterocycles.
Professor Anjai M. Rahatgaonkar (Department Of Chemistry, Institute Of Science,Nagpur) has presented synthesis of bioactive heterocycles.

In the search for novel and potent P-glycoprotein inhibitors as multidrug resistance reverting agents for cancer therapy

Prof.Giampietro Sgaragli, (University of Siena, Italy) has delivered his talk on Multidrug resistance (MDR) mediated by the pumps P-glycoprotein (Pgp) and MDR-associated proteins . He presented that the use of pumps inhibitors is a promising approach to overcome MDR. Among the several compounds (dihydropyridines, taxuspines) tested so far in his laboratory, some *N*,*N*-bis(cyclohexanol)amine aryl esters appear promising leads for the design of effective, novel MDR reversers in cancer cells.

Avoiding Multidrug Resistance while Targeting Cancer Cells

Professor Paul Erhardt(Director Center for Drug Design and Development,College of Pharmacy,University of Toledo.USA) has presented paclitaxel as a scaffold and delineated negative structure-activity relationships (NSAR) that can be exploited to avoid the P-glycoprotein transporter that is associated to a large extent with the development of multidrug resistance (MDR) in human breast cancer cells. He observed that the structural space encompassed by these NSAR overlapped with that which can enhance aqueous solubility, with that present in certain 'address' molecules being explored for their potential to selectively.

Prof. Janine Cossy **(**Laboratoire de Chimie Organique Associé au CNRS,France) presented synthesis of biologically active complex molecules by using catalytic reactions

Prof.TinaM.Nenoff (Sandia National Laboratories,A lbuqueque, NM) has presented about novel materials involved in radiological environments.Dr.Françoise Pontet(Hospital Lariboisiere, Paris,France) discussed about **h**ealth Informatics and Nomenclature, properties and Unit (C- NPU) Coding System.

Prof. Rolf Breinbauer (Institute of Organic Chemistry Graz University of Technology, Austria) presented synthesis of compounds libraries which can be used in chemical genetics screen.

Prof. Laurent El Kaim (Enseignant-Chercheur,ENSTA, France,) has presented isocyanide based multicomponent reactions for heterocyclic synthesis.During his talk he has discussed synthesis of novel heterocyclic compounds using multicomponent synthesis.

Professor B. P. Bandgar (Vice Chancellor, Solapur University, Solapur,Chemistry) has presented biology of novel anti-inflammatory and anti-cancer agents.

Prof. H. Ila(INSA Senior Scientist, Jawaharlal Nehru Centre For Advanced Scientific Research (JNCASR),Bangalore) presented synthesis of novel organosulfur synthones.

Prof. H.Junjappa **(**Reva Institute of Science & Management, Bangalore) has discussed hetero aromatic annulations. He utilized this synthetic strategy for synthesis of benzenoid, condensed aromatics benzoheterocycles in excellent yield.

Prof. Graham Jones,Chair, Department Of Chemistry & Chemical Biology,Northeastern University,USA, has presented de Novo Synthesis of Carbohydrates and Natural Products.

Dr. Zafra Lerman (President, MIMSAD Inc. USA) delivered her lecture on " Using chemistry to bridge gaps between nations.Prof. Virendra N Pandey,(Department of Biochemistry & Molecular Biology,New Jersey Medical School,USA) has presented his lecture on "Proteomics of Hepatitis C Virus - Host Cell Interaction: Identification of cellular/viral factors associated with HCV (+) strand RNA genome".

Discovery of therapeutics for the Spinocerebellar ataxia type 1 (SCA1)

Prof. Ramaiah Muthyala (Associate Director, Center for Orphan Drug Development,University of Minnesota, USA) presented his talk on Spinocerebellar ataxia type 1 (SCA1) disorder. He has discussed that Spinocerebellar ataxia type 1 (SCA1) is a fatal neurodegenerative disorder usually presenting in the third or fourth decade. The part of the brain associated with coordinating movement breaks down; interrupting walking, speech, and eventually even swallowing. There is currently no treatment or cure for SCA-1, although stem cell research may offer solutions in the future.During his talk he has discussed that SCA1 is caused by a CAG triplet repeat expansion that leads to a polyglutamine expansion mutation in

the ataxin-1 protein. SCA1 first presents with gait abnormalities and progresses to widespread dysfunction of the cerebellum and brainstem, eventually leading to death ten to fifteen years after onset. He highlighted that ultimate goal is the development of effective treatments for SCA1, which has an incidence rate just under 1 in 100,000. Studies show that at least three things are necessary for SCA1 pathology: an expanded polyglutamine repeat on ataxin-1, entry of ataxin-1 into the nucleus, and phosphorylation of ataxin-1. The focus of the presentation is the phosphorylation of ataxin-1 as a therapeutic target.

Dr.M.Pollastri (Department of chemistry,North Eastern University ,USA) presented his work on leishmaniasis and other neglected diseases.

Sustainable Route to Modified Nucleosides and Non-ionic Nucleoside Dimers of Importance in Healthcare

Prof.Ashok K. Prasad (Bioorganic Laboratory, Department of Chemistry, University of Delhi,Delhi) has presented efficient biocatalytic methodology for the selective manipulation of different hydroxyl groups in the sugar during the synthesis of nucleosides of biological importance.
Professor Brindaban C Ranu (Indian Association for the Cultivation of Science) presented his work on green chemistry.

A systematic study of benzimidazoles in search of selective antimicrobials targeting topoisomerase I : Development of *E.coli*. inhibitors

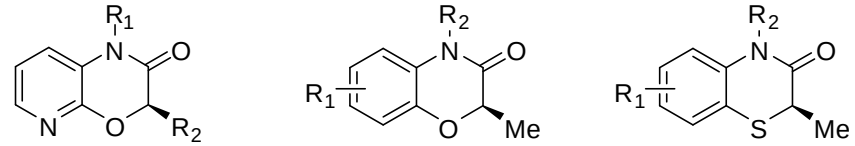
Dr.Vibha Tandon **(**Department of Chemistry,University of Delhi) has discussed a systematic study of benzimidazoles as selective antimicrobials agents targeting topoisomerase I .She presented that one of the putative target of the synthesized molecules is topoisomerase I. Fluorescence titrations also suggested that benzimidazoles bind reversibly to topoisomerase I and do not stabilize cleavable complexes. Her result suggested that benzimidazoles bind directly to enzyme with high affinity. Benzimidazoles do not inhibit DNA gyrase but inhibits mammalian topoisomerase II but at very high concentrations. We have also observed that benzimidazoles are inhibitors of Camptothecin resistant human topoisomerase I, increasing the clinical relevance of benzimidazoles.

Prof. Brajesh Kumar (Konkuk University, Seoul, Republic of Korea) presented his talk on Environmentally sustainable technique for production of bioactive compounds from agriculture wastes.
Dr.Nilesh Dagia (Piramal Life Sciences Limited,Mumbai) presented his work on inflammatory disorder.Dr. Akhilesh K. Verma, (University of Delhi) has discussed Tandem Synthesis of Indolo-, Pyrrolo[2,1-a]isoquinolines, Naphthyridines, Pyranoquinolines, Pyranoquinolinones and Isocumarins by the Electrophilic Cyclization of Alkynes.
Prof.K.Avasthi (Medicinal and process chemistry, CDRI, Lucknow) has discussed new fully flexible model based on pyrazolo[3,4-*d*]pyrimidine (PP) core, which is isomeric with biologically important purine, for understanding of arene interactions in polymethylene linker compounds has been developed.
Prof.Karol Grela (Institute of chemistry,University of Warsaw, Poland) presented his work on metathesis reactions.Professor P. T. Perumal (Head & Scientist 'G',Organic Chemistry Division, Central Leather Research Institute, Chennai) has delivered lecture on application of Catalysts

Efficient Approach to the Synthesis of Novel Heterocycles

Prof. Dong-Soo Shin**(**Department of Chemistry, Changwon National University#9 Sarim-dong , Changwon, Kyongnam, Korea) has discussed novel optical *N*-substituted-2*H*-pyrido[*b*][1,4]oxazin-3(4*H*)-ones, *N*-substituted-2*H*-benzo[*b*][1,4]oxazin-3(4*H*)-ones and *N*-substituted-2*H*-benzo[*b*][1,4]thiazin-3(4*H*)-ones with potential synthetic and pharmacological interest were designed and

synthesized *via* Smiles rearrangement using different methods including conventional heating and microwave irradiation by one step and in one-pot synthesis. Investigation on reaction time, yield and purification procedure showed that the synthesis under microwave irradiation was much more efficient method to obtain *N*-substituted-2*H*-benzo[*b*][1,4]oxazin-3(4*H*)-one, *N*-substituted-2*H*-benzo[*b*][1,4]thiazin -3(4*H*)-one and *N*-substituted-2*H*-pyrido[*b*][1,4]oxazin-3(4*H*)-one derivatives.



He also presented synthesis of (*R*,*R*)/(*S*,*S*)-2,2-dimethyl-2,7-dihydro-1*H*-oxireno[2,3-*c*] chromene and their derivatives . He presented design and synthesis of cromakalim derivatives, an important molecule which shows specific affinity towards potassium channels, based on the previous structure-activity investigation by applying different R4-and R6- substitutions.

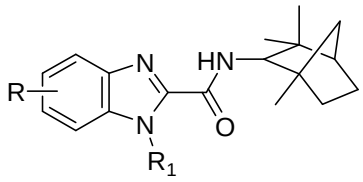
Prof.P.M.S. Chauhan (Medicinal and Process Chemistry Division, Central Drug Research Institute,Lucknow) has discussed Design and Synthesis of Nitrogen Heterocycles as Novel therapeutic Agents.

Prof.Anamik Shah (Department Of Chemistry, Saurashtra University, Rajkot) presented importance of heterocycles as bio active agents.

Prof.A. K. Shaw (Medicinal and Process Chemistry Division,Central Drug Research Institute,Lucknow) has discussed his work on chiron approach synthesis of Natural products and Natural product like molecules from carbohydrate-based building blocks. He has discussed stereoselective synthesis of various molecules and natural products of biological importance using commercially available carbohydrates as chiral synthons.

Novel Substituted 1H-benzo[d]imidazole-2-carboxamide derivatives as selective and oral CB2 agonists for the prevention of allodynia in rat neuropathic pain models

Dr. Brijesh Kumar Srivastava(Zydus Research Centre, Ahmedabad) has highlighted CB2 receptor agonists for the treatment of neuropathic pain. In this presentation, he describe the pharmacological characterization of 1H-benzo[d]imidazole-2-carboxamide derivatives (**1)** their functional activity and selectivity against human CB2 receptors using cAMP assay. The lead compound attenuated tactile allodynia produced by spinal nerve ligation (SNL) in a dose-related manner. These results show promise for this class of compounds as potent CB2 agonists in the treatment of neuropathic pain.



1: Novel Benzo[d]imidazole-2-carboxamide derivatives

Prof.W. Haq,(Medicinal and Process Chemistry Division, Central Drug Research Institute,Lucknow) discussed his work on peptide-Oligonuleotide conjugate as therapeutics.

Prof. Dalip Kumar (Group Leader, Chemistry Group,BITS, Pilani,Rajasthan) presented his work on muticomponent reactions.

ISCB Awards

ISCB also awarded Prof.Katsuhiko ARIGA (World Premier International (WPI) Research Center for Materials Nanoarchitectonics (MANA), ISCB award for excellence for the year -2011in chemical sciences(International Category),Professor Krishna Kumar (Chairman, Department of Chemistry, Tufts University, Medford, MA) ISCB award for excellence in chemical sciences. ISCB young scientist award (Biological Science) Dr Vikash Kumar Dubey (Department of Biotechnology,Indian Institute of Technology Guwahati, Assam, India).
To Commemorate centenary of Prof Marie Curie's Nobel Prize in Chemistry ISCB has instituted ISCB Distinguished Women Scientists award. Recipient of ISCB Distinguished Women Scientists award was Dr. (MRS.) RUKHSANA I. KURESHY(Central Salt and Marine Chemicals Research Institute (CSMCRI), Bhavnagar).

Recipients of ISCB award for excellence, Prof.Katsuhiko ARIGA during award lecture highlighted, recent research activities on Supramolecular Materials. Some of supramolecular structures, highly useful for bio-related applications such as drug delivery and sensing.
During award lecture Prof. Kumar presented his research on chemical and biological methods to create novel and functional molecules that allows us to understand the mechanism of, and/or control biological processes. Dr Vikash Kumar Dubey has discussed research on development of therapeutics against Leishmaniasis by targeting parasite specific metabolic pathways.
Dr. (Mrs.) Rukhsana I. Kureshy in her award lecture she highlighted her research on design of chiral metal complexes and used them as efficient catalysts for various organic transformations such as asymmetric epoxidation, epoxide ring opening reaction and hydrolytic kinetic resolution of racemic terminal epoxides under homogeneous and heterogeneous systems.

Special session on Academia- Industry Interactions
Dr. G.J. Samathanam (Advisor,Department of Science & Technology. New Delhi), Prof. Nicole Moreau (President,IUPAC,,CNRS,France), Prof. Dr. Ulrich Jordis**(**Vienna University of Technology, Austria),Professor Colin J Suckling, (University of Strathclyde,Glasgow,UK), Prof. Graham Jones(Northeastern University,USA, Dr.Mukund Chorghade (USA),Prof.Anamik Shah (President ISCB) and Prof.P.M.S.Chauhan (General Secretary ISCB) were panelist of this session.
During panel discussion all members highlighted importance of Academia- Industry Interactions. They have discussed how industry can be benefited with knowledge of academician.

Valedictory Function
Chief Guest of valedictory function was the her Excellency Dr .Shrimati Kamla, the Governor of Gujarat.
During her Excellency address,she highlighted that 20th century remained the century of exploitation, where mankind and nature became victims of exploitation, it led to global imbalance creating a gulf between the affluent and poor classes, and it also increased the gap between the developed and developing countries. In this century, we must endeavor to bridge the gap, also striking an ideal balance. India is set to increase its eminence in global arena. Excellent youth-power, excellent knowledge pool, excellent democracy and excellent system of justice are the four pillars for India. We have the highest young population in the world, of which 72% of the total population is below 40 years of age. But majority of the population in the world be it India, South East Asia and many other parts of the world are facing the acute health and malnutrition problems. We have problems of various diseases like Malaria, Leishmaniasis, Tuberculosis ,swine flu, chickegunia, dengue fever are posing a big challenge for the common man to survive which also affects the productivity of any nation and resulting into the direct impact on economy of a nation. We must focus our research as per the Gandhian philosophy that when we plan anything for the development the focus should be the common

man so that he can avail the fruits of such development. She appeal all the delegates of this international conference to follow the same principle of Gandhian philosophy that when you develop new drugs, new vaccines, or new cure for the diseases always think of the poorest of the poor be benefitted by the outcome of your research.

Prof.P.M.S.Chauhan has delivered his lecture in Valedictory function and highlighted importance of research in the area of neglected diseases. He told that every 30 seconds a child dies from malaria due to malaria in Africa. Malaria rank first among major cause of deaths under five year child in Africa.

Prof.Anamik Shah(President ISCB) highlighted importance of affordable drugs for poor and said that ISCB foundation for neglected discease will be form to help research in neglected diseases.

The renowned pharma company and industries like Dr. Reddy's Laboratories ltd.,Hyderabad ,Ranbaxy,Gurgao, ZydusCadila Ahemdabad, Orion Pharma, Nicholas Piramal, Ltd. Torrent Pharmaceuticals Ltd., Wockhardt ,Aurangabad , THINQ Pharma USAetc. have participated in this conference.

Looking Ahead

The next conference in the series will be held on "Chemistry -Biology research for affordable drugs" (ISCBC-2012) during 15th-18th January, 2012, at Solapur University, Solapur, Maharashtra

Conclusion

Affordable drugs for poor only possible if scientists from industry and academia can bridge the gaps in discovery and development .To achieve this goal the close interaction of scientists from chemical sciences and biological sciences very important. This conference has provided a platform for interactions of scientists and opportunities to the researchers in the areas of chemical sciences and biological sciences and other related areas to interact with each other for mutual benefits. Apart from eminent academician a number of professionals from pharmaceutical and biotechnology industry have also actively participated and shared their ideas and built new networks. The delegates particularly, young researchers also actively participated in this conference. The conference has provided an important opportunity to young researchers for direct interactions with eminent scientists of India and abroad. This type of interactions will be a great help for their future research activity and also helpful to established new collaborative research programmes with the experts of different research areas..

P. M. S. Chauhan,
General Secretary, Indian Society of Chemists and Biologists (ISCB)
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