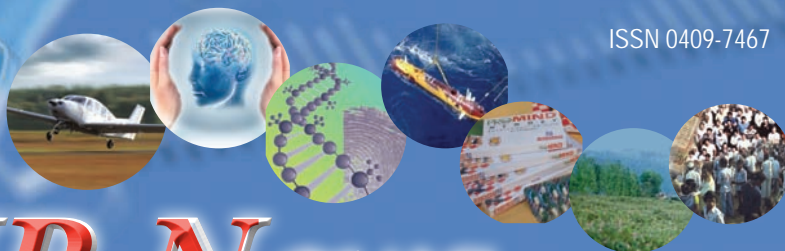




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In The News

CSIR Celebrates its 72nd Foundation Day Dr. Jitendra Singh Says Scientists of India are the Best Bet



On the dais during the 72nd CSIR Foundation Day Function at NPL, New Delhi (from left) Dr. P. S. Ahuja, Dr. Jitendra Singh, Prof. VijayRaghavan and Prof. Ramesh Chandra Budhani

THE Council for Scientific & Industrial Research (CSIR) celebrated its 72nd Foundation Day on 26 September 2014. The function was held in the CSIR-National Physical Laboratory in New Delhi.

While Union Minister for Science & Technology and Earth Sciences Dr. Jitendra Singh chaired the function, eminent Scientist and Secretary of the Department of Science & Technology, Prof. K. Vijay Raghavan delivered the foundation day lecture on Neurobiology, and Director General of CSIR, Dr. P. S. Ahuja delivered the welcome address.

Addressing the gathering, Dr. Jitendra Singh, Minister of State (Independent Charge) for Science & Technology and Earth Sciences, emphasised on the need for a sound scientific foundation if the country expected to achieve its objective of becoming a superpower in the next few years. In the years to come, even the economic strength of a nation will be determined by its scientific strength and capability, he added.



Dr. Jitendra Singh, the Minister for Science & Technology & Earth Sciences and Vice President, CSIR addressing the gathering

The Minister said he was very sure that the young ambassadors of young India, the young scientists of India are the best bet, the best living example and, in fact, the “key” to the nation’s vision of “Make in India”. India

was especially well placed in this aspect, he said, since more than 65% population of the country was below the age of 35. He said that the youngsters are our future science bank.

Calling upon the teachers and parents to catch young innovative minds at the age of high-school before they enter into the conventional rat race for competitive exams, Dr. Jitendra Singh said that if we are able to identify, groom and own young boys and girls who have the potential to make future innovations, we will not only be enriching scientific research with the best talent but we would also be able to channelize our youngsters in the direction most suitable to their aptitude. Innovation is the prerequisite for technology, he said, and the two together are prerequisites to inspire the young. He called upon parents and teachers to mentor the young and remind them always: Why not be the best?

Dr. Jitendra Singh said not only has his Ministry decided to make it mandatory for over 5000 scientists in the government sector to give lectures and classes in schools and colleges, but also initiated new schemes for young women scientists in order to avoid mid-career exit of young women scientists for family or other reasons. CSIR today is ranked 81st among the 2740 such institutions worldwide and in the times to come, we wish to bring into the centrestage of focus the incredible scientific feats of this Institution, he added.



Dr. P. S. Ahuja , Director-General, CSIR delivering the Welcome Address

Earlier, in his address, Dr. P.S. Ahuja, Director-General, CSIR apprised the audience and the Minister of some of the key developments during the past year that CSIR could be truly proud of. He informed that CSIR too was a party to the stupendous success of the country’s Mars mission since the sensors that detect faults in rockets were developed by CSIR-Central Electronics Engineering Research Institute (CEERI), Pilani.

The National Aerospace Laboratories had developed a state-of-the-art transmissometer for measurement of runway visibility at airports helping safe landing and take-off operations. These were earlier being imported at a high cost. The DG informed that NAL had received orders for 20 Drishti systems to

be employed in various airports throughout the country.

Dr. Ahuja also informed that CSIR had made a major breakthrough by developing the first indigenous confocal microscope. This had been developed at the CSIR-Central Glass and Ceramics Research Institute in Kolkata. CGCRI was also supplying safety glass used in reactors, which was until now being imported, to BARC.

Of late, CSIR had been aligning itself more closely with the Micro Small and Medium Enterprises (MSME) sector. A directory of 640 products had been compiled along with the Ministry of MSME and CSIR was looking forward to initiating entrepreneurship in such sectors. In fact, the DG said that all institutes of CSIR had now become innovation centres.

He particularly mentioned the development of novel construction material for radiation safety for the country's nuclear centres being promoted by CSIR-Advanced

Materials and Processes Research Institute (AMPRI). The brass sector that had been in trouble lately due to non-retention of lustre has been redeemed by the CSIR-National Metallurgical Laboratory (NML).

Dr. Ahuja informed that the publication record of CSIR had also improved with a total of around 5000 publications and the average Impact Factor rising from 2.56 to 2.86 this year.

He also informed that MoUs had been signed with several foreign countries and that there was a demand from foreign fellows to come to CSIR as part of exchange programmes. Besides, CSIR scientists had also been awarded the Infosys Prize and the Shanti Swarup Bhatnagar Prize.

On the occasion, Dr. Ahuja also announced the names of the winners of the Shanti Swarup Bhatnagar Prizes 2014 were also announced by Dr. P.S. Ahuja, Director General, CSIR.



The 72nd CSIR Foundation Day Lecture was delivered by Prof. K. VijayRaghavan, FRS, Secretary, Department of Biotechnology (DBT), Government of India with additional charge as Secretary, Department of Science and Technology (DST) and also Department of Scientific and Industrial Research (DSIR). Prof. VijayRaghavan delivered an enlightening lecture on *The Neurobiology of Brain Development and the Ways Ahead for India*.

Prof. VijayRaghavan gave a fascinating account of the mystical human brain and how advances of the past few decades have shed light on how a massively complex brain such as ours is made. This has been possible because of the studies on the less complex but interesting brains of model organisms such as worms, flies, fish, frogs and mice. He reviewed some of the recent advances in the study of how the brain develops.

Prof. VijayRaghavan said that brains are made by genes, but they are also affected by our environment – nutrition from our mothers while in the womb and several other factors after birth. For instance, he said, our brains are also made by our drains. We have messed up one by messing up the other. Malnutrition and disease during foetal and early development are also serious threats to



Prof. VijayRaghavan delivered this year's CSIR Foundation Day Lecture, titled, '*The Neurobiology of Brain Development and the Ways Ahead for India*'

cognitive development. In India we have the largest instances of stunted brain growth, he said. This is a major challenge that India faces – the mission to save our brains.

Towards the end of the day's function, several prestigious CSIR awards were also given away during the function. These include the CSIR Young Scientist Awards, CSIR Technology Awards, CSIR Diamond Jubilee Technology Award, CSIR Innovation Award for School Children, and CSIR Awards for S&T Innovations for Rural Development.

Dr. P.S. Ahuja Announces Shanti Swarup Bhatnagar Award 2014

Dr. Paramvir Singh Ahuja, Director General Council for Scientific & Industrial Research (CSIR) announced the prestigious Shanti Swarup Bhatnagar Awards for the Year 2014 during the 72nd CSIR Foundation celebrations held at the CSIR-National Physical Laboratory on 26 September 2014.

The Shanti Swarup Bhatnagar (SSB) Prize for Science and Technology are perhaps the most awaited scientific awards in the country. Instituted in the year 1957, in the memory of late Dr (Sir) Shanti Swarup Bhatnagar, FRS, the founder director of the Council of Scientific & Industrial Research (CSIR), the SSB Prize is awarded each year on the basis of conspicuously important and outstanding contributions to human knowledge and progress, made through work done primarily in India during the five years, preceding the year of the prize.

Any citizen of India engaged in research in any field of science and technology up to

the age of 45 years is eligible to be nominated for the SSB Prize. Overseas Citizen of India (OCI) and Persons of Indian Origin (PIO) working in India are also eligible to be considered.

The SSB Prize, comprising a citation, a cash award of Rs. 5,00,000/- (Rupees five lakh only) and a plaque, is given to each person selected for the award in the following disciplines:

- Biological Sciences
- Chemical Sciences
- Earth, Atmosphere, Ocean & Planetary Sciences
- Engineering Sciences
- Mathematical Sciences
- Medical Sciences
- Physical Sciences

Ten (10) scientists have been selected for Shanti Swarup Bhatnagar Prize for Science and Technology for the year 2014.

Biological Sciences

Dr Roop Mallik

Department of Biological Sciences
Tata Institute of Fundamental Research
Mumbai 400 005

Earth, Atmosphere, Ocean and Planetary Sciences

Dr Sachchida Nand Tripathi

Department of Civil Engineering
Indian Institute of Technology
Kanpur 208 016

Chemical Sciences

Dr Kavirayani Ramakrishna Prasad

Department of Organic Chemistry
Indian Institute of Science
Bangalore 560 012

Engineering Sciences

Dr S Venkata Mohan

Bioengineering and Environmental Centre
CSIR-Indian Institute of Chemical
Technology
Hyderabad 500 607

Dr Souvik Maiti

CSIR-Institute of Genomics and
Integrative Biology
Mall Road, Delhi 110 007

Dr Soumen Chakrabarti

Department of Computer Science and
Engineering
Indian Institute of Technology Bombay
Mumbai 400 076

Mathematical Sciences

Dr Kaushal Kumar Verma

Department of Mathematics
Indian Institute of Science
Bangalore 560 012

Physical Sciences

Dr Pratap Raychaudhuri

Department of Condensed Matter Physics
and Materials Science
Tata Institute of Fundamental Research
Mumbai 400 005



Medical Sciences

Dr Anurag Agrawal

CSIR-Institute of Genomics and
Integrative Biology
Mall Road, Delhi 110 007

Dr Sadiqali Abbas Rangwala

Raman Research Institute
Sadashivanagar
Bangalore 560 080

CSIR Young Scientist Awards 2014

The CSIR Young Scientist Award 2014 was given in the areas of Biological Sciences, Chemical Sciences, Earth, Atmosphere, Ocean and Planetary Sciences, Engineering Sciences and Physical Sciences (including instrumentation).

Each award consists of a citation, a cash prize of Rs.50,000/- (Fifty Thousand) only and a plaque. CSIR Young Scientist Awards are also entitled to a research grant of Rs.5.0 Lakhs per annum for a period of five years and an honorarium of Rs.7500-00/ per month till the age of 45 years.

Till 2013, 163 scientists including (21 women scientists) have received the CSIR Young Scientist Award and out of these 16 scientists have been conferred with the prestigious Shanti Swarup Bhatnagar Prize.

This Award was instituted in 2004 in the fond memory of Prof. G.N. Ramchandran, a pioneer of Protein Chemistry and the founding father of structural biology in India, for recognizing excellence in the interdisciplinary subject/field of Biological Science & Technology.

For the year 2014, Advisory Committee consisting of eminent scientists recommended the following eight scientists for the CSIR Young Scientist Awards.

Biological Sciences

Dr. Rajender Singh of CSIR-Central Drug Research Institute (CDRI), Lucknow for his outstanding contribution in understanding the role of aldose reductase in male fertility, which may lead to development of novel molecules for contraception.

Dr. Vivek T. Natarajan of CSIR-Institute of Genomics and Integrative Biology (IGIB), Delhi for his outstanding contribution in Skin

Biology. His work identified a critical role for IFN- γ in pigmentation and has relevance to future therapeutic approaches.

Chemical Sciences

Dr. Parvinder Pal Singh of CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu for his significant contribution in developing iron-based C-H functionalization/activation methods and their application towards the synthesis of bioactive molecules.

Dr V. Ganesh of CSIR-Central Electrochemical Research Institute (CECRI), Karaikudi, for his significant contribution in the modulation of electron transport across electrode-electrolyte interfaces of metal and semiconductor electrodes, in electrocatalysis and in the area of biosensors.

Engineering Sciences

Dr. Manmohan Dass Goel of CSIR-Advanced Materials and Processes Research Institute (AMPRI), Bhopal for his outstanding and original contribution in the area of “Blast Response of Structures and its Mitigation using Advanced Lightweight Materials”. The research presented design and development of different innovative structural components that can be used as blast resistant structure.

Earth, Atmosphere, Ocean and Planetary Sciences

Dr. Sumit Kumar Mishra of CSIR-National Physical Laboratory (NPL), New Delhi, for his original contribution in the areas of optical properties of dust aerosols in the atmosphere. Utilizing the numerical modelling techniques and experimental observations for characterization of the aerosol morphology and complex mixing states, he estimated the radiative forcing effect, which will help to improve the regional radiation budget and its impact on climate change assessment.

Physical Sciences

Shri N. Selvankumar of CSIR-National Aerospace Laboratories (NAL), Bengaluru, for his outstanding contribution in preparation and characterization of solar selective coating using novel materials.

Dr. Ved Varun Agrawal of CSIR-National Physical Laboratory(NPL), New Delhi for his outstanding contribution to the development of biosensors for the detection of total cholesterol and food toxins.



CSIR Young Scientist Awardees with Dr. Jitendra Singh, Prof. P. S. Ahuja , Prof. VijayRaghavan and Prof. Ramesh Chandra Budhani

CSIR Technology Awards 2014



Given annually, the CSIR Technology Awards were instituted in 1990 with a view to foster and encourage in-house multidisciplinary team efforts and external interaction for technology development, transfer, marketing and commercialization. Each award carries a cash prize of Rs. 2 lakh. The award for the “Most Significant CSIR Technology of the Five Year Plan Period” has a cash prize of Rs 5 lakh. Besides, a plaque and a citation are also given to the awardees.

Technology Award for Physical Sciences Including Engineering

The criteria for the award are visible and sustained impact of a high order on the industrial/economic/societal activity, high scientific content, innovative character, global novelty and competitiveness.

The award this year has gone to the CSIR-Indian Institute of Chemical Technology (CSIR-IICT), Hyderabad for developing the process of Misoprostol-a drug useful for medical abortion. Misoprostol is an important prostaglandin-

based drug declared by the WHO as an essential medicine to induce labour. The drug is also used in combination with pain killers as an anti-ulcer agent.

The technology was transferred to Avra Laboratories, which has successfully commercialised the technology. The CSIR-IICT technology has successfully reduced the cost of production of the drug making it affordable for the common people in the country.

Technology Award for Innovation

This award is given to the best innovation that was patented in any area.

The award this year has gone to the CSIR-Indian Institute of Petroleum (CSIR-IIP), Dehradun for developing a process for simultaneous production of US grade gasoline and high purity benzene from C6 heart cut of FCC gasoline. The process produces benzene lean gasoline by recovery of high purity benzene from unprocessed cracked gasoline fraction by extractive distillation without the requirement of any pre-processing of the

feedstock ahead of the extractive distillation unit.

There is no instance of any extractive distillation plant anywhere in the world which is currently processing FCC gasoline heart cut fraction for the dual purpose of producing benzene lean gasoline as well as high purity benzene.

Reliance Industries plan to implement the CSIR-IIP process for processing nearly 600,000 MT per annum of the FCC C6 Heart Cut Gasoline stream from their DTA refinery site at Jamnagar.

Technology Award for Business Development & Technology Marketing

The award is given for making significant contributions towards enhancing the business of CSIR knowledgebase and is given for new business and marketing initiatives,

strategies evolved and implemented, and quantum of business generated and realised. The award this year has gone to the CSIR-Institute of Microbial Technology (CSIR-

IMTECH), Chandigarh for significantly enhancing the business and markets of its knowledgebase. CSIR-IMTECH played a vital role in the quest of the country towards scientific and technological leadership. The Institute provided scientific solutions to industries and adopted several new strategies and developed business models for smooth flow of technologies to industry.

The laboratory has developed a portfolio of clot-buster life-saving cardiac drug Streptokinase and has successfully transferred it to industry. After introduction of CSIR-IMTECH's streptokinase, prices have dropped by upto 65% and today these occupy about 50% of the Indian market. The value creation by CSIR-IMTECH's streptokinase for the nation is nearly Rs 20,000 crore.

Technology Award for Most Significant CSIR Technology of the Five Year Plan Period

The award is given to such technology that has proven itself in the marketplace for at least five years.

The award this year has gone to the CSIR-National Metallurgical Laboratory (CSIR-NML), Jamshedpur for the development and commercialization of column flotation technology for the beneficiation of low-grade mineral deposits. The technology is for production of high quality mineral concentrates with better

recoveries. It replaces multi-stage conventional flotation. The developed flotation column of CSIR-NML has gained widespread industrial acceptance due to its improved metallurgical performance in comparison with conventional flotation cells.

CSIR-NML has transferred the technology to several industries including Indian Rare earths Ltd. And M/s McNally Bharat Engg. Co. Ltd.



CSIR Technology Awardees with Dr. Jitendra Singh, Prof. P. S. Ahuja , Prof. VijayRaghavan and Prof. Ramesh Chandra Budhani

CSIR Innovation Award for School Children 2013



In order to enhance creativity amongst school children, CSIR announced for the first time the Diamond Jubilee Invention Award for School Children on 26 April 2002 – the day celebrated as World Intellectual Property Day throughout the world. The objective of this competition is to capture the creativity and innovativeness amongst school children and create awareness about IPR. The competition continued till 2010 and in the year 2011 was renamed as the 'CSIR Innovation Award for School Children'.

During the last eleven years, i.e. from 2002 to 2012, 4181 proposals were received for these Awards from various parts of the country and 66 inventions/innovations were selected for various prizes by a High Level Awards Selection Committee.

For the year 2013, 535 innovation proposals were received from school children for the competition. Out of these, nine innovations were selected and 13 children were given the awards. The winner gets a cash prize, trophy and a certificate.

No first prize has been awarded as no innovation was found suitable as per the required criteria.

SECOND PRIZE (Rs. 50,000/-)

Ms. Debadrita Mandal of class 10th from Bongabari Girls High School, Purulia, West Bengal for her innovation “Homelicks-Low Cost Home Health Drink for common people”. This Innovation seeks to promote production of health drink for poor children who suffer from under nutrition.

Miss S. Sushmita, Miss Nandana Varshney, Miss Swastika Palit and Miss Tanushree Dubey from Class 10th and 11th from Carmel Convent Sr. Sec. School, BHEL Bhopal for their unique innovation “Self-sustained insect Management in Farming”. This Innovation relates to self-sustainable pest management for plant

protection using integrated pest management (IPM) strategy by preparing a mechanical trap which is based on visual stimuli by means of ultraviolet-blacklight for the insects. The system utilizes solar energy for its operation. The trap is user-friendly, economical and feasible for use in fields.

THIRD PRIZE (Rs. 30,000/-)

Master S. Vishal of Class 9th from Smt. Durgadevi Choudary Vivekanandan Vidyalaya Sakthivel Nagar, Kolathur, Chennai and **Master M. Tenith Adithyaa** of class 11th from The Hindu Higher Secondary School, Chattiram Street Watrap, Tamil Nadu. **Master S. Vishal's** innovation was “Complete Pollution Control Device for



Winners of CSIR Innovation Award for School Children with Dr. Jitendra Singh, Prof. P.S. Ahuja and Prof. Ramesh Chandra Budhani

Small Scale Industries and Road Side Workshops”. The innovation seeks to scrub and clean polluted air discharged from the industries. It provides a device that is simpler, inexpensive and mostly suitable for small, very small and road side workshops etc. using available materials like ordinary water, carbon and common alum.

Master M. Tenith Adithyaa's innovation was “Banana Leaf Preservation Process”. The innovation preserves the banana leaves for about 1 year without any use of chemicals and also increases the durability, stretchability, temperature holding capacity which no leaf can resist so that it can be used to make Banana-leaf-plates, which are 100% eco-friendly. The leaves are first soaked in cold water for 5 minutes, then heated in a controlled manner. The leaves obtained from this technology are very strong and have amazing weight holding capacity.

FOURTH PRIZE (Rs. 20,000/-)

Ms. Shrishti Asthana of class 9th from Shri Guru Harikishan Model Sr. Sec. School, Chandigarh, **Master Rahul G S and Master Raghav Anand** both of class 10th from Padma Seshadri Bala Bhavan Senior Secondary School Nungambakkar, Chennai and **Master Yash Sharma** of class 10th from Vindyanchal Academy, Dewas M.P.

The innovation of Shrishti Asthana was “Photo Catalytic Mineralization of Detergents in Waste Water Using ZnO Nanoparticles”. This innovation demonstrates a Nano ZnO assisted photo catalytic degradation of detergent using

visible and solar light as a new green option for the treatment of contaminated water.

The innovation of **Master Rahul G S and Master Raghav Anand** was “Movable False Ceiling for Conservation of Energy”. Their innovation seeks to reduce the power consumption of A/Cs which use roughly 1 trillion kWh of power annually. This innovation relates to construction of a movable false ceiling in bedrooms.

Master Yash Sharma's innovation was “Prevention of Loss of Water From Wet Soil Around the Plant”. This innovation utilizes the idea of prevention of loss of water from wet soil around plants that evaporate water due to transpiration by using an apparatus. One can even control soil salinity by using said apparatus.

FIFTH PRIZE (Rs.10,000/-)

Master Aakanxit Khullar of Class 12th from Delhi Public School, R K Puram, New Delhi for RACE (Reader For Activism in Conservation of Electricity). The innovation relates to saving of electricity by using the device RACE (Reader For Activism in Conservation of Electricity). Its display unit alerts the viewers if consumption of electricity in their building is high.

Miss Janani R G of Class 8th from Kendriya Vidyalaya No. 2 Sadras, Kalpakkam, Tamil Nadu for her Innovation “Dust Free Healthy Duster/Moppers”. Her innovation relates to replacing conventional black board dusters used in school with special material like synthetic chamois towels and PVA sponge.

CSIR Awards for S&T Innovations for Rural Development – 2013

CSIR instituted the CSIR Award for S&T Innovations for Rural Development (CAIRD) in 2006 to recognize and honour those outstanding S&T innovations that have helped transform the lives of rural people or alleviated the drudgery of the rural people.

The award is given to an innovation that has created a paradigm shift in standards of quality of life of the rural people or demonstrated competitive advantage and positive user response or helped in generation of rural employment in the

country and shown a new way of conducting business to achieve social and economic transformation in the domain of rural development. The award consists of a cash prize of Rs 10 lakh, a citation and a shield.

For the year 2013, the CSIR Award for S&T Innovations for Rural Development

(CAIRD) has been conferred upon CSIR-Centre for Cellular & Molecular Biology (CSIR-CCMB), Hyderabad and Directorate of Rice Research, ICAR, Hyderabad for development and deployment of an improved Samba Mahsuri rice variety which is bacterial blight resistant, high yielding and possesses fine-grains.



CSIR Diamond Jubilee Technology Award 2014

CSIR instituted the CSIR Diamond Jubilee Technology Award in commemoration of its Diamond Jubilee from the year 2003. The award acknowledges the most outstanding technological innovation that has brought prestige to the nation.

The award is given to a technology that is developed in the country by Indian innovators and meets the highest global standards. Technologies leading to commercially successful products, processes

and services, which give India a sustainable competitive advantage, are considered for the award. The award consists of a cash prize of Rs 10 lakh, a citation and a shield.

For the year 2014, the CSIR Diamond Jubilee Technology Award has been conferred upon Avra Laboratories Pvt. Limited, Hyderabad for Development and Commercialization of “Irinotecan – a unique drug for colorectal cancer”.

CSIR Foundation Day Celebrations

CSIR Foundation Day Celebrations at Laboratories/Institutes

CSIR-Central Building Research Institute, Roorkee

The 72nd anniversary of CSIR was celebrated with great enthusiasm at the CSIR-Central Building Research Institute, Roorkee on 26 September 2014. Dr. S.P.S. Bakshi, Chairman cum Managing Director, Engineers Projects India Ltd. (EPIL) and President, Indian Building Congress, New Delhi graced the occasion as chief guest. Prof. S.K. Bhattacharyya, Director, CBRI presided over the function. The superannuated staff of CBRI and all the staff members of the institute graced the occasion besides other dignitaries.

The program started with ‘Swacha Bharat Abhiyan’ in which everyone participated including the chief guest Dr. Bakshi and Prof. S.K. Bhattacharyya. Later,

under the ‘CSIR Faculty Training Program and Motivation to Science Students’, students



Welcome Address by Prof. S.K. Bhattacharyya, Director, CBRI

presented their working models, mentored by institute scientists and technical officers. The chief guest took keen interest and appreciated their projects.

A welcome address was given by Mr. R.K. Garg, Chief Scientist and the chairman of the CSIR Foundation Day Committee 2014.

Prof. Bhattacharyya welcomed the chief guest and distinguished guests present on this occasion and highlighted the glorious past of CSIR, establishment of five labs in the year 1942 and CBRI in 1947. Since then CSIR has been contributing to the development of the country covering all the important areas of science and technology through thirty seven laboratories all across the country. He highlighted the role of scientists in the development of the country with the example of the successful 'Mangal expedition'. He informed that CSIR-CBRI has taken

initiatives for promoting an electronically green culture in the institute through different modules. He also talked about the major focus areas of R&D activities of the institute and the activities of AcSIR in the institute; M.Tech. programme on 'Building Engineering and Disaster Mitigation' (BEDM); Ph.D. program and dedicated power line installation by UPCL for the uninterrupted power supply in the institute.

Dr. S.P.S. Bakshi, Chairman cum Managing Director, Engineers Projects India Ltd. (EPIL) and President, Indian Building Congress, New Delhi suggested that for the forthcoming 100 smart city project by the Ministry of Urban Development, CBRI may join hands with EPIL. He highlighted the need for optimum utilization of resources and role of R&D institutions, with the example of use of fly-ash in construction by EPIL. He highlighted the need of fire safety in buildings and suggested that fireproof materials need to be developed.

On this occasion, a bilingual edition of 'CBRI News Letter' and 'Bhavanika' was released by the chief guest. The CSIR prize for meritorious staff children who have secured more than ninety percent marks in three science subjects in class twelfth and have got admission in IITs, were honored by the chief guest and Director. The superannuated scientists/staff of CSIR-CBRI were honored by presentation of a shawl, samman patra and a wrist watch. Also, CBRI staff members who have completed twenty five years' service in CSIR were felicitated by the chief guest by presenting them a wrist watch.

There were a number of activities including essay competition for staff children, visit of school students providing platform for scientist-student interaction and generating interest among the youth for science and technology. School children from seven local schools along with faculty members visited the institute. A cultural program was organized in the evening which was enjoyed and appreciated by one and all. Mrs. Kajal Bhattacharyya, Patron of ladies club, CSIR-CBRI and chief guest of this function distributed the prizes.



Release of bilingual edition of 'CBRI News Letter' and 'Bhavanika'



CSIR-Central Glass and Ceramic Research Institute (CSIR-CGCRI), Kolkata



CSIR-Central Glass and Ceramic Research Institute (CSIR-CGCRI), Kolkata, kept up the happy tradition of celebrating the Foundation Day of CSIR on 26 September, by organizing a special Foundation Day lecture and inviting school students for a visit to the laboratories.

At the event, Acting Director, Shri Kamal Dasgupta delivered the Welcome Address and warmly welcomed the dignitaries and all members of the audience. Briefly he recapitulated the success stories of CSIR-CGCRI. Specifically he mentioned that CSIR-CGCRI had recently delivered 20 tons of Radiation Shielding Window glass (RSW-glass) to the Bhabha Atomic Research Centre (BARC). In addition CSIR-CGCRI had also made glass beads to contain nuclear material for safe storage. It was a matter of pride that a total of 3 MT of low Na_2O based borosilicate nodules had been supplied to the Tarapur Atomic Power Station and 15 operations of nuclear encapsulations had been successfully carried out. These contributions to the strategic sector were great achievements for the Institute, he said.

On the high-tech front too, CSIR-CGCRI's other accomplishments included the supercontinuum broadband light source and development of a Confocal Microscope as an end product with application. Last year, this indigenously developed supercontinuum light source was released by the Minister for S&T at the CSIR Foundation Day celebrations in Delhi. Subsequently, CSIR-CGCRI has entered into commercial agreement with Industry and the first industrial grade unit has been supplied and successfully installed at IIT-Kanpur. He said, "I am happy to inform you that Confocal Microscopy is being launched by the Minister of Science & Technology and Earth Sciences and Vice President, CSIR at the Foundation Day function at Delhi today." In addition, CSIR-CGCRI has demonstrated the working of 500W Solid Oxide Fuel Cell (SOFC) stack.



Shri Kamal Dasgupta Acting Director CGCRI, addressing the audience

Shri Dasgupta also touched upon the contributions of Technology Facilitation Centre that had recently been set up at CSIR-CGCRI, Kolkata, to meet the needs of entrepreneurs in the MSME-sector and facilitate their access to the requisite technology. The Khurja Outreach Centre too is doing exemplary work, particularly in giving hands-on training to potters etc., he said. The Naroda Outreach Centre has bagged a mega project in joint collaboration with Gujarat Matikam Kalakari Rural Technology Institute, Gandhi Nagar to energize the pottery sector.

The publication of research papers in high impact journals is an indication of the quality of the work being done here, just as the presence of the many young research scholars shows a continuous infusion of fresh blood in the Institute. The exemplary scientific leadership of CSIR-CGCRI scientists is reflected in the many honours and awards they have earned in the last year. Shri Dasgupta said that these scientific achievements indicate that CSIR-CGCRI is progressing well. He said that Dr. P. S. Ahuja, DG-CSIR on his maiden visit to the Institute had acknowledged this and had expressed great satisfaction about it.

The Guest of Honour Shri Samarendra Kumar, Director, National Council of Science Museums (NCSM), Kolkata while addressing the audience gave an encapsulated history of NCSM, which is globally the largest chain of science museums under the aegis of a single umbrella. He recounted fact that in the early days, the NCSM was part of the CSIR family. He spoke at length about the similarities and the comple-

mentarities in the science communication activities of CSIR and NCSM. He elaborated on the recent activities and the novel schemes designed to promote innovations, as also the positioning of NCSM as an innovation hub to engage young audiences. Shri Kumar spoke about the importance of science popularization; a concept that was explained in much greater detail by the Chief Guest Dr. G. S. Rautela,

Director General of NCSM.

Dr. G. S. Rautela's talk was titled *Science, Science Literacy and Communication*. He began by greeting the entire scientific fraternity of India on the historic success of India's Mars Mission. He also complimented CSIR-CGCRI for the wonderful work it was doing for the benefit of society.

Drawing upon his enormous expertise as a science communicator, Dr. Rautela enthralled the audience by weaving together the threads of history of science, his own experiences and established scientific facts into a compact narrative. His speech touched upon the facets influencing public perception of science; science and policy changes over time; the wide gap in the common man's knowledge about S&T fields as well as S&T key features of modern society vis-à-vis

requirement of S&T in society.

Dr. Rautela said that Industry, Universities, Research Institutions, Schools, even labour markets need S&T competencies. S&T knowledge is needed for citizen's democratic participation. He said that there are challenges here; in many countries enrolment in S&T is falling, there is growing gender gap in choice of S&T subjects and also lack of qualified workforce for Industry. Thus, there is burning need for good S&T teachers for attracting bright students.

He scrutinized the reasons behind an apparent disenchantment with S&T learning due to factors such as outdated curriculum and poor quality teaching with a lack of professionally qualified teachers to make science interesting; stereotypic image of scientists and engineers and the fact that scientists are not "heroes" anymore; post-modernist attacks on S&T, anti/quasi scientific trends and alternatives; and communication gap between scientists and the members of the public. He said that scientists and technologists do not glorify S&T enough.

However, this was not the case earlier when top scientists such as Michael Faraday, Humphry Davy and Ruchi Ram Sahni, amongst others, gave brilliant popular science lectures aimed at the masses. In this context he highlighted how the Poona Industrial Museum, subsequently named Lord Reay Museum came into being; and also how the Birla Industrial and Technological Museum was established at Kolkata. Museums are hubs of science education and over the years, their role has been evolving too, he said. Initially museum exhibits were designed to be "eyes on" only. Then, the exhibits became "hands on". From there, the next step was "minds on" approach and now, it is an all-encompassing "emotions on" display. The paradigm shifts are apparent in the way the visitors now experience the museum. His message was that a good science communicator must contextualize knowledge to be effective; the knowledge has to be made personally relevant so that the public can identify with it.

Mementoes were presented to the Chief



Dr. G. S. Rautela
delivering his talk

Guest and the Guest of Honour by Shri Dasgupta.

Awards were given to the wards of the staff of CSIR-CGCRI for their academic brilliance. Mementoes were given to members of the CSIR-CGCRI family on completion of 25 years of service to the Council. Those who had retired voluntarily or on superannuation were felicitated on the occasion too. Research scholars who had

participated in the Research Scholar's Day were handed their prizes on the occasion as well.

This programme was followed by visits of school children from different parts of Kolkata, who were given a guided tour of the Institute. A cultural programme brought down the curtains on CSIR's 72nd Foundation Day celebrations at CSIR-CGCRI.



CSIR-Central Scientific Instruments Organisation, Chandigarh



Seated on the dais (*from left*): Dr. Amod Kumar, Acting Director, CSIR-CSIO, Prof. Anjan Trikha, AIIMS, New Delhi and Dr. C. Ghanshyam, Chief Scientist, CSIO

The CSIR Foundation Day was celebrated at the CSIR-Central Scientific Instruments Organisation by organizing a Foundation Day Lecture, Open Day, and Poetry, Quiz, Painting and Dance Competitions besides other events.

The Foundation Day Lecture was delivered by Dr. Anjan Trikha, Professor, Department of Anesthesiology, All India Institute of Medical Sciences (AIIMS), New Delhi on 29 September 2014. In his address, Dr. Trikha highlighted the importance of anesthesia in modern day medical procedures. He emphasized its importance and significance in acute labor pain, post operative pain and chronic pain management.

He said that the doctor treats the patient as his own baby as long as the patient is in his care. He stressed that the best way to take care of the patient is to leave nothing to chance. This makes the job of the anesthetist more critical since surgical risk remains same but the risk of giving anesthesia changes with age and other factors.

Earlier, Dr. Amod Kumar, Acting Director, CSIR-CSIO while welcoming the chief guest highlighted the aims and goals of CSIR and its contribution in the field of science and technology. He also talked about various incentives and award schemes of CSIR for young scientists and school children. Dr. Amod Kumar also presented

an overview of the on-going projects and future plans of the Laboratory.

The programme concluded with distribution of prizes to the wards of staff who had excelled in various sports and other events. Earlier, all those staff members of CSIO who had completed 25 years of regular service in CSIR and also those who retired during the preceding year were honoured with mementoes, shawls and Service Awards.

A quiz competition was organized for the CSIO staff on 26th September 2014. It was a broad spectrum quiz in which all the scientists, technical and administrative staff participated with enthusiasm.

Besides this, various competitions like painting competition, poetry competition and dance competition were organized for the wards of CSIO staff as part of the CSIR Foundation Day celebrations. These

competitions were in different age groups. In all 67 children participated in these events and were given prizes. In the poetry competition, children exhibited their creativity by composing poems in Hindi in praise of CSIR and on various subjects of science and technology. Children of classes 1st to 5th recited poems in Hindi some of which were their original composition.

As part of the CSIR Foundation Day, CSIO Labs were kept open for general public on 29th September 2014 from 1000 Hrs to 1300 Hrs. More than 1500 visitors, including students from various schools, engineering colleges, university and general public went around various laboratories of the organisation. This provided them a unique opportunity to see live demonstration of the instruments developed at CSIO and a chance to interact with the scientists.

CSIR-National Botanical Research Institute, Lucknow

The CSIR-National Botanical Research Institute, Lucknow, observed “Open Day” on 29 September 2014 to commemorate the Foundation Day of the Council of Scientific & Industrial Research. On this occasion, various Laboratories, Botanic Garden, Herbarium, Exposition, Library and Banthra Research Station of the Institute remained open to public from 11.00 am to 4.00 pm. Prof. Akhilesh K. Tyagi, Director, NIPGR, New Delhi, was the Chief Guest of the

function and delivered the Foundation Day Lecture.

Prof. Tyagi in his lecture *Seeds of Dialogue* said that the world population is growing at a rapid pace and it is expected to reach the nine billion mark by 2050, with substantial contribution from India. Efforts, therefore, need to be intensified to improve agricultural output with minimum damage to the environment to help sustain future gains. Humans have genetically modified crops for long by selective breeding, cross pollination or hybridization. This has allowed us to produce up to 250 million tons of food grains in a year thereby maintaining per capita availability close to 200 kg of food grains in India. To maintain delivery of desirable levels of nutritious food to our growing population, we need to innovate in food production strategy.

Prof. Tyagi said that transgenic or genetically modified (GM) crops provide a potential alternative to achieve such goals.

The input in terms of desirable genes for production of GM crops is being





Prof. Tyagi being felicitated by Dr. Nautiyal

provided from sequenced genomes of diverse organisms as well as crop genomes. While GM crops resistant to various biotic stresses (pests, weeds, viruses) are being cultivated worldwide on 175 million hectares, efforts in labs and containment are on to improve traits like climate resilience, nutrition, post-harvest gain, yield, and fertilizer use efficiency. The use of GM crops requires prior evaluation for bio-safety, environmental safety, economic sustainability and ethical issues related to each product. This sometimes results in conflicting views requiring need of specified regulatory system.

In India, public and private sectors have contributed significantly to GM crop research and Indian Bt cotton is being cultivated on 11 million hectares, taking India to the third place among the GM crop cultivating countries worldwide, said Prof. Tyagi. Several other products are in the pipeline ready for contained field trials. It would entail acceptance of guiding principles of international regulatory systems along with national regulatory systems as well as nation-specific issues. We also need to absorb the potential of emerging alternative technologies capable of modifying a gene without leaving footprints of the trans-gene in the GM crop. Each case needs to be evaluated by experts with objectivity and closer communication among policy makers, scientist, industry, farmers and consumers.

Earlier, Dr. C.S. Nautiyal, Director,

CSIR-NBRI, welcomed the distinguished guests and other dignitaries present on this auspicious occasion. Prof. Akhilesh K. Tyagi, Chief Guest, distributed certificates and mementoes to 21 employees who have completed 25 years of CSIR service and 27 employees who retired during the last year. Prof. Tyagi also distributed prizes and certificates to those children of staff

who participated and won in the Science Essay competition organized on this occasion.



Glimpses of CSIR Foundation Day



CSIR-North East Institute of Science & Technology, Jorhat



Celebrating 72nd CSIR Foundation Day at CSIR-NEIST. Dignitaries on the dais (from left) Dr. D. Ramaiah, Director, CSIR-NEIST, Padmashree Prof. D. Balasubramanian, Chief Guest, Dr. R.C. Boruah, Outstanding Scientist

The CSIR-North East Institute of Science & Technology, Jorhat celebrated the 72nd Foundation Day of CSIR on 22 September 2014. The celebration was held at Dr JN Baruah auditorium and was largely attended by eminent scientists, invited dignitaries,



Padmashree Prof D. Balasubramanian, Chief Guest delivering 72nd CSIR Foundation Day Lecture at CSIR-NEIST

guests, prominent citizens of Jorhat town, members of press and media and members of CSIR-NEIST fraternity, both old and new. Padmashree Prof D. Balasubramanian, a renowned Eye Biologist of International repute and the Research Director, LV Prasad Eye Institute and former Director, CSIR-CCMB, Hyderabad, former President, IAS and Secretary General, Academy of Sciences for the Developing World, Italy graced the programme as the Chief Guest. He delivered the CSIR Foundation Day lecture on “Pebbles and Ripple-Invention and Innovation” and emphasized the need of more Innovation for development of technologies through a series of Inventions. It is the product which leads to Invention and Invention leads to further Innovations and products and thus the cycle goes on, he said.

Dr. D. Ramaiah, Director, CSIR-NEIST briefly mentioned the achievements of the institute in his presidential address. Dr. R.C. Boruah, Outstanding Scientist, CSIR delivered the welcome address. The staff members who retired during the year 2013 – 2014 were felicitated along with the

members who completed their 25 years of service in CSIR. Prizes were distributed to the winners of Essay, Art and Quiz competitions held on the occasion. The Annual Report of the laboratory for the period 2013-2014 was released in the occasion by Prof. D. Balasubramanian. The CSIR-NEIST Golden Jubilee Scholarships for Under Graduate students (Science) of NE India for the year 2014-2015 were presented to two brilliant students from Assam and Manipur. The day



Release of CSIR-NEIST Annual Report 2013-14 by Prof. Balasubramanian, flanked by Dr. D. Ramaiah (*left*), Director, CSIR-NEIST and Dr. R. C. Boruah (*right*), Outstanding Scientist

was also observed as 'Open Day' during 9 AM-12 AM for the students as well as for the public to visit the laboratory.



CSIR-National Institute of Oceanography (CSIR-NIO)

CSIR Foundation Day celebrations were held at the National Institute of Oceanography (CSIR-NIO) on 26 and 29 September 2014 comprising of open day for public and 2 public lectures which concluded with the address by the Honorable Governor of Goa, Smt. Mridula Sinha. During her address the Governor urged the audience to promote Indian traditions and encourage the use of Hindi as a language of communication. She also applauded the efforts of CSIR-NIO for its contribution in the field of oceanography as well as its efforts in reaching out to

common public.

A public lecture by Prof KS Valdiya, Padmashri, Honorary Professor of Geodynamics, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore on 'Natural calamity and human tragedy in Uttarakhand in the Himalaya' was organized on 26 September during which he dealt with various phenomena that influenced the natural tragedy in Uttarakhand.

The closing ceremony was held on 29th September, which was presided over by Smt Mridula Sinha, Honorable Governor, Goa.



CSIR Foundation Day Celebrations

During the programme, Prof. Valdiya delivered a lecture in Hindi on “Puraankaal mein Bharat ke logon ki ekataa kaa adbhut saphal prayaas”. The celebration culminated with the release of a book ‘Samudra Evam Manav’ authored by Dr. Jiyalal Ram Jaiswar, Retd. Scientist, CSIR-NIO, by Mrs. Sinha, Honorable Governor, Goa. Prof Valdiya released the *Sagar Bodh*, a collection of scientific papers in Hindi, edited by Dr. Rakesh Sharma.

During the open day, around one thousand five hundred students from schools as well as science and engineering colleges of Goa and other states were shown live exhibits on ocean data observation systems, specimens of marine organisms and minerals

from the ocean floor, besides acquainting themselves with findings of ancient civilizations and shipwrecks along the Indian coast. The visitors viewed films on topics such as the chemistry of the ocean, earth beneath the sea, life in the ocean, restless ocean, and oceans and climate, in addition to a talk on ‘careers in oceanography’ describing various challenges and opportunities in the field of ocean sciences.

On this occasion, Dr. SWA Naqvi, Director, CSIR-NIO felicitated staff members who retired during the last year and those who completed 25 years of services. Children of NIO staff members who excelled in education and sports were also felicitated during the function.



Glimpses of
the Foundation Day Celebrations
at CSIR-NIO



NANOINDENTATION OF BRITTLE SOLIDS

by Arjun Dey and Anoop Kumar Mukhopadhyay, published by *CRC Press*, Taylor and Francis Group, Boca Raton, London, New York.

ISBN 13:978-1-4665-9690-0, pages 411.

Dr. Anoop Kumar Mukhopadhyay, Chief Scientist, CSIR-Central Glass and Ceramics Research Institute (CSIR-CGCRI), Kolkata and Dr. Arjun Dey, Scientist, Thermal Systems Group, ISRO Satellite Centre, Indian Space Research Organisation, Bangalore, have jointly authored the book *Nano-indentation of Brittle Solids*. The book, which is a consolidated account of all the work done in the past decades by the Materials Characterization Division of CSIR-CGCRI, comprises of a dozen sections. Multiple papers have been presented under each section to give a holistic picture of the subject.

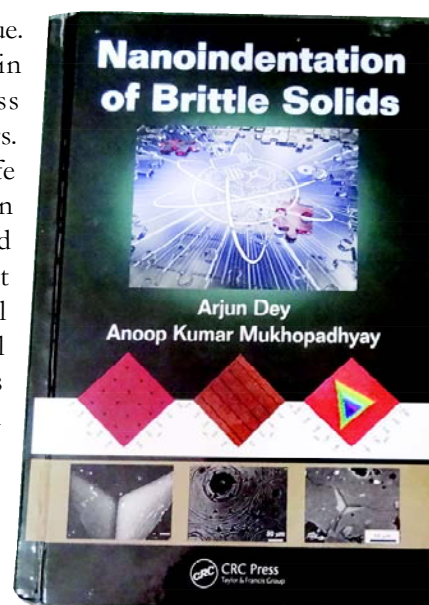
Nano-indentation is a powerful tool to measure mechanical properties at the nano-level; this includes deformation of bulk materials, thick coatings, composites, alloys, hybrid nano composites, thin films etc., and has enormous importance as a technique for studying materials physics particularly to determine mechanical integrity at micro-structural length scale. The book discusses different models of nano-indentation data analysis methods. This is followed by extensive coverage of the details of the instrumentation involved in the different types of commercially available nano-indentation machines. The workings of a nano-indenter have been explained with particular emphasis on its essential components coupled with how these components interact to work together.

Perhaps one of the most interesting applications comes into play when nano-indentation techniques are applied to glass. Glass is a brittle solid and in recent times

has entered a whole new league. From simple glass used in window panes, smart glass comes in many new avatars. This includes microwave-safe crockery glass, glass used in high-end electronic items and architectural glass that incorporate a slew of novel features. However, despite all the advances in the field, glass continues to remain vulnerable to contact-damage induced brittle fracture.

The only property that governs the intrinsic resistance against such damage is the hardness of glass; at the micro-structural scale this is its nano-hardness. An interesting observation is that in soda-lime glass (the commonest variety) about 5-10 per cent enhancement of nano-hardness is observed with an increase in loading rate. Another dimension of study included in the book under review is dynamic contact situations or when two bodies are in relative motion with respect to each other. Such a situation is commonplace enough, say when airborne sand scratches glass.

The book under review pays equal emphasis to the nano-mechanical properties of ceramics. This is another important example of brittle solids and finds large-scale use in a variety of products and processes. Nano-indentation induced phase transformations have also been reported for both crystalline and relaxed amorphous silicon samples as well as for tough ceramic



such as zirconia-toughened alumina. The book under review also includes nano-indentation behaviour of anode-supported solid oxide fuel cells, which have a stellar role to play in these days of energy crunch. In addition, attention has also been paid to sealant glass-ceramic, Hap coatings, ceramic coatings, ceramic thin films, etc.

The book touches upon almost all aspects where nano-indentation finds application. It has been written in an attractive style. Since contact induced damage is a

common occurrence in Industry there is no doubt that this book will be greatly welcomed by those associated with fabrication technology or with the development of novel products. Research scholars are likely to benefit hugely from the contents of the book by gaining a thorough understanding of the basics of contact mechanics and nano-indentation.

Dr. Sukanya Datta
CGCRI

Book Release

Andhra Pradesh Akademi of Sciences Book Release Function at CSIR-CCMB



Bioinformatics book release

A special issue by Guest Editor Prof. U.S.N. Murty, Chief Scientist & Head Biology Division, CSIR-IICT, Hyderabad entitled *Bioinformatics* published by the A.P. Akademi of Sciences (APAS) was released on 1 September 2014 at CSIR-CCMB, Hyderabad.

The book was released by Dr. B.L. Deekshitulu, Former Director, National Remote Sensing Agency, Hyderabad, in the presence of Dr. Ch. Mohan Rao, Director CSIR-CCMB and Hon. President APAS Hyderabad, Dr. Sesikiran, Former Director NIN & Hon. Secretary APAS, Hyderabad and Dr. R.B.N. Prasad, Chief Scientist, CSIR-

IICT, Hyderabad.

The book covers a wide range of topics on Information and Modelling approaches in Drug Discovery; Intervention and Management of Filariasis through Bioinformatics approaches; Bioinformatics tools for Protein Secondary Structure Prediction; Molecular Dynamics Simulation of Lipases: Insights into Domain Movements; Database Methods in Software-as-a-service (SAAS); Agricultural sector; RNA Structural Bioinformatics and Current trends in Structural Bioinformatics of Protein-Protein Interaction.

The field continues to develop intensively in academia and commercially it is highly interdisciplinary. Many scientific subjects and methods other than those mentioned in the book had to be explored. The book is intended to be a complete study companion for researchers and students. It brings together the multiple disciplines necessary for a profound grasp of the field.

Over the years the Akademi has been publishing Journals & Books on science including seminar proceedings as part of its publication activity. The efforts of the Guest Editor Dr. U.S.N. Murty were well appreciated by Dr. B.L. Deekshitulu and Dr. Ch. Mohan Rao.

Visits

Visit of Dr. P. S. Ahuja, DG-CSIR to CSIR-CGCRI



Dr. Paramvir Singh Ahuja, Director General, CSIR, delivered an incisive speech on his maiden visit to the CSIR-Central Glass and Ceramic Research Institute (CSIR-CGCRI), Kolkata, on 19 September 2014. A warm welcome to the Institute was extended to him by Acting Director, Shri Kamal Dasgupta who also introduced him to the audience.

Dr. Ahuja began his talk by applauding the remarkable achievements of CSIR-CGCRI – one amongst the first four laboratories initially established by CSIR. He expressed satisfaction that over the years CSIR-CGCRI has remained centred around the core mandate of CSIR. The core mandate, he said, was to cater to Industry, to Society, to the Environment and to provide support to strategic sectors such as defence and atomic energy, as necessary. He said that laboratories must be aligned to the core concept of CSIR.

With respect to benchmarking CSIR's academic success with other knowledge institutions, he said that CSIR was unique. It is a conglomerate of institutes of technological development. CSIR translates science to technology. CSIR does good science and it leads to publications. However, it does not end there. The end is technology. The idea is to do innovative technology exploiting the scientific knowledge base.

He said that the Institute was engaged in science with good technology dimensions. Its presence in the ceramics and glass industry is well known. He said that while it was good to gather data that would lead to publications, which was important, it was even more important to have good patents. He emphasised the need for CSIR to have a good patent portfolio. "The country looks to us," he said in this context.

Licensing of patents is immensely important. His clear message was that CSIR's

mission transcends mere academic excellence and that the main target must not be overlooked. He reiterated the need for alignment with Industry, Society, Environment and support for strategic self reliance, wherever required.

Taking the bull by the horns, he admitted that lately it has been a rather roller coaster of a ride for the Council. However, there was no need to be disheartened. What was



Dr. P. S. Ahuja, DG-CSIR addressing the audience



Dr. P. S. Ahuja, interacting with scientists at CGCRI

needed was to sustain the good work being done, keeping in mind the rapidly changing international situations, demands, challenges, economic blocks and equations. The need is to be rapidly responsive to swiftly changing global scenarios. Like every other institution, CSIR too has to redefine its position to keep pace. He advised scientists and staff to look towards ECF, which is a major way to meet the issues arising out of the slowing down of the economy. The emphasis has to be on trying to generate resources from outside. He requested scientists to focus on need-based objective of research. His motivational message was that in teamwork there is no "We or They" but only, "Us."

From addressing scientists and pointing out the way forward, DG-CSIR then shifted his focus to address the concerns of the Administrative cadre. He thrashed out many thorny issues such as career progress rules of this cadre, dimensions of induction, and need to alleviate issues of stagnation, etc. On the questions pertaining to pay scale he reminded the audience that the matters were still under consideration. However, he assured the audience that CSIR is doing its best to resolve the issue and that a little more time would be needed.

He was emphatic that there was a burning need to introduce contemporary technology upscaling in day to day use. In that context he said that implementation of ERP is inevitable. He also requested feedback on the limitations of the system, so that these could be rectified. He called for the promotion of the HR-Portal which is linked to employee ID. In particular he emphasised that Purchase Section should use it well.

Dr. Ahuja said that the Technical cadre is the backbone of CSIR and their needs will have to be looked at and that they too need to respond. Scientific and Technical

staff need to work together, particularly in areas where knowledge is being translated into the practical domain i.e., knowledge encapsulated in academic publications is being translated into products/processes, etc. He was happy to share the news that a committee is looking into how to incentivize domain of technology-issues.

The address of DG-CSIR did not bypass the next generation either. He was happy to note the large number of young researchers in the audience and commented positively on the Scientist:Researcher ratio of the Institute. He said the Institute was the best playground for young students who could hone their skills here. For the students and researchers, the message was clear: Doing science is serious business and a lot of responsibility rests on their young shoulders.

DG-CSIR also had words of advice for the entire Institute with regard to keeping it evergreen by exercising judicious choice during recruitment even in these times of constraints so that the Institute could maintain its competitive edge. He discussed screening criteria and recruitment issues.

Finally, he called for a relook and realignment particularly in the context of the mid-term appraisal of the XIIth Plan. He exhorted the scientists to focus on the Do-ables. His final summing up was almost a battle cry: He reminded the audience about his promise to the national leadership of India, "Challenge us, and we commit to deliver."

That the visit of DG-CSIR and his address energised the scientists and staff of CSIR-CGCRI was evident in the spontaneous upswelling of questions all of which Dr. Ahuja answered succinctly yet clearly.

Dr. Sukanya Datta
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