



# CSIR-CGCRI

## NEWS LETTER

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### Mr Kamal Dasgupta takes over as Acting Director



Mr Kamal Dasgupta

Prof. Indranil Manna stepped down from the office of Director, CSIR-CGCRI on October 31, 2012 to take over as the Director of Indian Institute of Technology, Kanpur. Mr Kamal Dasgupta, Chief Scientist and Head, Fiber Optics & Photonics Division assumed the charge of Acting Director with immediate effect. Mr Dasgupta has significantly contributed to CSIR-CGCRI's successful innovative R&D in the area of Fiber Optics & Photonics especially the FBG-based optical fiber in strategic and civilian applications.

### SPOTLIGHT

#### CSIR-CGCRI wins CSIR Technology Award for the 2<sup>nd</sup> time

The Institute has earned the coveted recognition again. The honour came for the "Most Significant CSIR Technology of the Five Year Plan Period - 2012" for developing "Completely Packaged Commercial-Grade C-Band Erbium-Doped Fiber Amplifier (EDFA) for CATV and Telecom Networks". The dedicated team of scientists was led by Dr S K Bhadra, Chief Scientist, Fiber Optics & Photonics Division. The award was given away by Mr Yashraj Ravi, Hon'ble Minister of State for Science & Technology and Earth Sciences & Vice-President CSIR on September 26, 2012 at the 70<sup>th</sup> CSIR Foundation Day Function in New Delhi.



Mr K Dasgupta, Dr Ranjan Sen and Dr SK Bhadra (from left) receiving Technology Award from Hon'ble Minister, DG, CSIR is seen on extreme right



Dr A P J Abdul Kalam lighting the lamp to inaugurate the 63<sup>rd</sup> Foundation Day function

### MAJOR EVENTS

#### Closing of Diamond Jubilee Celebration

The Institute celebrated its 63<sup>rd</sup> Foundation Day on August 26, 2012 and concurrently pulled down curtains on the Diamond Jubilee Celebration that had been inaugurated on September 4, 2010. Bharat Ratna Dr A P J Abdul

**"I am glad to learn that CGCRI technology has benefited about 64 industries in Naroda area of Gujarat by indigenizing their inputs and thereby giving them additional revenue of an average of Rs. 3.6 crores per year."**  
- Hon'ble Dr A P J Abdul Kalam

Kalam, former President of India was the Chief Guest. Padma Vibhushan Dr K H Sancheti, Founder SIOR, Pune, was the Guest of Honour. Other distinguished Guests included Prof Samir K Brahmachari, Secretary, DSIR and DG, CSIR and Dr Srikumar Banerjee, Chairman, Research Council, CSIR-CGCRI and Homi Bhabha Professor at the Department of Atomic Energy, Govt of India. On this landmark day, the Institute stepped into its 63<sup>rd</sup> year, in the presence of dignitaries from government, industry

and academic circles. In his welcome address, Prof Indranil Manna greeted the dignitaries, guests and colleagues and gave a short outline of the Institute's grand and eventful journey. He thanked the former Directors of CSIR-CGCRI for their significant leadership and vision.

Dr Srikumar Banerjee said that CSIR-CGCRI could rise to meet the challenge of an apparently contradictory, but renewed CSIR mantra, that

parallelly encouraged high quality science with social obligation to masses. He recalled with happiness that CSIR-CGCRI had come on a delivery path of product and processes for real-life applications in high-tech sectors such as strategic glasses, optical fiber, bioceramics, solid oxide fuel cell etc. Dr K.H. Sancheti lauded CSIR-CGCRI's role in alleviation of the problem of bone ailments and said that ceramic hip-joint implants developed by CSIR-CGCRI was a significant contribution to society.

Dr A.P.J. Abdul Kalam urged the scientists to help India overcome the fifth nation syndrome that has been tagged on the country's achievements. Using the examples set by the IT and BT sectors. Dr Kalam pointed to the technology convergence occurring in S&T arena. He stressed the fact that nanotechnology should set trends and added that ecology would be the new template of the current century. Dr Kalam prophesied that the new age model would emanate from info, bio, nano and eco-based technologies.

Prof Samir K Brahmachari announced the five steps taken to rebrand CSIR in the public eye. These are (i) Attaching CSIR's name before the names of its constituent units, (ii) Attracting highest quality of manpower to the CSIR system, (iii) Creating CSIR-Tech to empower scientists to set up spin-off companies, (iv) Creation of AcSIR and thus raising hopes of CSIR alumni in future and (v) CSIR-800 with a view to creating wealth for many.

Earlier, Dr Kalam had inaugurated an exhibition. He also presented mementoes, released CSIR-CGCRI's Commemorative Volume brought out on the occasion of the Diamond Jubilee Celebration and also presented a pack of books co-authored by him to Director, CSIR-CGCRI.

## DG, CSIR delivers 9<sup>th</sup> Atma Ram Memorial Lecture

Prof S K Brahmachari delivered the 9<sup>th</sup> Atma Ram Memorial Lecture. The title of his seminal talk was "A Tale of Three Cities : A Molecular Journey". In a nostalgic but spell-binding presentation, he narrated the contour of his career and concluded that figuratively it was a trans-disciplinary journey in the boundary-less domain of science. The moot point of his lecture was that scientists should think globally and not hesitate to take risks as often, big things happen by accident. He cited several such instances that he had experienced. Dr Srikumar Banerjee chaired the session.



Dr Srikumar Banerjee (left) handing over a silver plaque to the speaker

## 70<sup>th</sup> CSIR Foundation Day

The Institute celebrated the 70<sup>th</sup> CSIR Foundation Day on September 25, 2012 a day ahead of the scheduled date of September 26, 2012 to concentrate on the main programme at New Delhi. The day-long programme was graced by the Chief Guest Dr Milan K Sanyal, Director, Saha Institute of Nuclear Physics, Kolkata. Prof Indranil Manna in his address presented the scientific and allied developments of CSIR-CGCRI since the CSIR Foundation Day last year. Dr Sanyal spoke on "Synchrotron X-ray Scattering Techniques for Material Research" and described the various technical developments related to the subject.

Mementoes and prizes were distributed to 22 retirees and 12 staff-members who had completed 25 years of service. Prizes were also given to the staff members, and their wards, who had emerged winners in the various cultural programmes. Cash award was given to a ward for her meritorious



Mementoes designed using strategic glass created by CSIR-CGCRI were awarded to the dignitaries

academic performance in the board examination. About 100 school students and 7 teachers visited the Institute.

One set each of exotic mementoes made out of strategic glass fabricated and designed by CSIR-CGCRI was presented to Dr Manmohan Singh, Prime Minister of India and President, CSIR, Mr Vayalar Ravi, Mr Ashwani Kumar, Minister of State for Science & Technology, Eminent Scientist Prof C N R Rao and to 15 other reputed Indian personalities at a special Foundation Day function on September 26, 2012 at New Delhi.

## PEER RECOGNITION

### Innovation Award

Innovation awards were given away by the two Distinguished Guests on August 26, 2012 to the research workers and staff of the Institute for their excellence. The awardees are as follows:

**Young Research Scholar:** Dr. Debashri Ghosh, Fiber Optics and Photonics Division

**Young Scientist:** Ms. Atasi Pal, Fiber Optics and Photonics Division

**Best Technology Transferred:** Dr. S. Bandyopadhyay and team, Ceramic Membrane Division for the work 'Ceramic membrane based high capacity modules for pretreatment of turbid water or polishing of Iron & Arsenic contaminated water using micro-filtration technique' transferred to PorelDass Water & Effluent Control Pvt. Ltd, Howrah, West Bengal

**Best Industry Supported Project:** Dr. Swapan Kr Das and team, Refractory Division, for the project 'Development of value added ceramic products utilizing solid wastes generated at Visakhapatnam Steel Plant' sponsored by Rashtriya Ispat Nigam Ltd., Andhra Pradesh

### Best Paper:

**Materials Science and others :** Anuradha Mitra, Debrina Jana and Goutam De, Nano-Structured Materials Division for their paper 'A facile synthesis of cubic (1 $\mu$  - 3 $\mu$ ) alumina films on glass with potential catalytic activity'. Chem. Commun., 2012, 48(27), 3333-3335

**Glass and Ceramic:** Ankita Bose, Monjoy Sreemany and Sandip Bysakh, Materials Characterization Division for their paper 'Role of TiO<sub>2</sub> Seed Layer Thickness on the Nanostructure Evolution and Phase Transformation Behavior of Sputtered PZT Thin Films During Post-Deposition Air-Annealing', J. Am. Ceram. Soc., 2011, 94(11), 4066-77

**Best Employee:** Sanjib De, Sr. Tech(2), Program Management Division

**Best Supporting Section:** Finance & Accounts Section

### Students Day Award

Winners of the Research Students Day held in CSIR-CGCRI on July 18, 2012 were also awarded. The winners were:

**Siv Prakash Singh (Oral) and Rik Chattopadhyay (Poster) in Glass, Fiber**

Optics & Photonics and Sensor & Actuator group

**Sudipta Goswami** and **Madhumita Mukhopadhyay** (Oral) and **Kaushik Bhowmick** (Poster) in Nanostructured Materials, Sol-Gel and Fuel Cell & Battery group

**Jugal Kishore Das** (Oral) and **Priya Banerjee** (Poster) in Ceramic Membrane, Advanced Clay & Traditional Ceramics and Refractory group

**Somoshree Sengupta** and **Ankita Bose** (Oral) and **Payel Bandyopadhyay** (Poster) in Non-oxide Ceramics, Bio ceramics & Coating and Materials Characterization group

**Debashri Ghosh** won the maiden **Debabrata Basu Memorial Award**

### Professional Award



Dr Swapan Kr Das receiving silver plaque from Mr Nerurkar

**Dr Swapan Kumar Das**, Chief Scientist and Head, Refractories Division, on August 21, 2012 received an award in the form of silver plaque and a citation from Indian Refractory Makers Association (IRMA) for his valuable contribution to the development and application of Refractories in India on the occasion of Annual General meeting of IRMA. The award was presented by Mr. H.M. Nerurkar, Managing Director, TATA Steel Limited.

**Dr Kaushik Biswas**, Junior Scientist, Glass Division received the Indian National Science Academy Young Scientist Award.

**Manjusha Chakraborty**, Senior Research Fellow, Bioceramics & Coating Division received the Young Scientist Award of the Materials Research Society of India, Kolkata Chapter, for her presentation 'Inorganic-Organic Conjugate Nano-carriers for Targeted Delivery of Anti-cancerous Drugs' on August 8, 2012 at MRSI Young Scientist Colloquium in Kolkata.

### Overseas Nomination

**Dr Jui Chakraborty**, Scientist, Bioceramics & Coating Division was invited to deliver a talk entitled 'Anionic Nano clay-based drug delivery: What's in Fate' at the 2nd Asian Clay Conference during September 6-8, 2012 at Ewha Womans University, Seoul, Republic of Korea.

**Dr L K Sharma**, Scientist-in-Charge, Khurja Outreach of CSIR-CGCRl delivered a lecture at the Osaka University and Tokyo Institute of Technology, Japan in September 2012.

### Poster Award

★ **Debrina Jana** and **Goutam De** received Best poster award for their paper 'PVP assisted shape conversion of Ag nanoparticles in alumina sol and influence of shape on SERS' at the 2<sup>nd</sup> International Conference on Advanced Nanomaterials and Nanotechnology (ICANN 2011) during 8 - 10 December, 2011 at Indian Institute of Technology, Guwahati.

★ **Anirban Dandapat** and **Goutam De** received 2<sup>nd</sup> Best poster award for their poster 'Host-mediated Synthesis of Cobalt Aluminate-Alumina Nanocomposites with High Catalytic Activities' at the International Conference on Nano Science and Technology (ICONSAT 2012) during January 20-23, 2012 organized by ARCI, Hyderabad.

★ Missed in the CSIR-CGCRl Newsletter Vol 2, Issue 3, 2011-12

**Ashis Kumar Mandal** and **Ranjan Sen** received a special prize at the MRSI National Symposium held during October 10-12, 2012 at BARC, Mumbai

## TECHNOLOGY NEWS

### Ceramic Membrane Plant at Taki, West Bengal



Chief Guest Dr Srikumar Banerjee speaking at the inaugural function at Taki

A plant of 30000 LPD capacity was commissioned on September 29, 2012 at Puratan Bazar, Hasnabad, Taki municipality, North 24 Parganas, West Bengal, for supply of safe drinking water. The plant is designed to purify water of the River Ichamati in two steps using micro-filtration cum RO-based membranes developed by CSIR-CGCRl and CSIR-CSMCRl, Bhavnagar.

The novelty of the plant is that the system does not require chemical treatment of water as ceramic microfiltration membrane based pretreatment modules remove turbidity and undesirable elements so that the pre-treated water becomes suitable (TDS level below 5000 ppm) for reduction of brackishness/salinity by polymer-based RO membrane. The Chief Guest at the inaugural function, Dr Srikumar Banerjee said, scientists should think of more economically viable options of providing drinking water, monitoring quality aspects and transforming the Taki plants into a replicable model. Several other dignitaries also spoke on the occasion.

### Agreements for Licensing of Know-how for the Manufacture of Glass Lining Materials for Chemical Process Equipment/Reactor

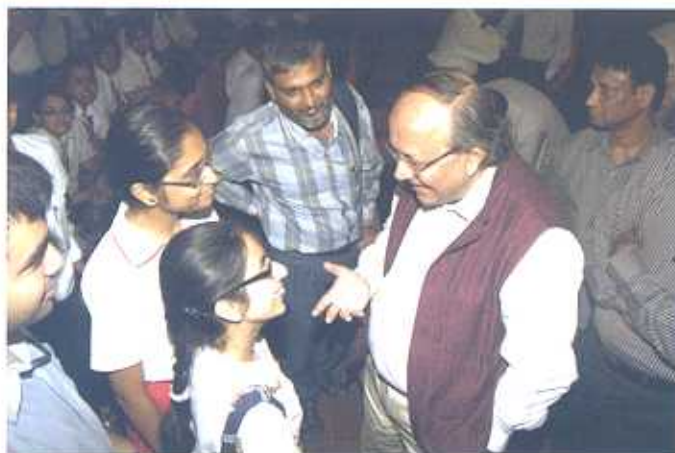
Agreements were signed with two Mumbai-based business houses namely Advanced Expertise Pvt Ltd (September 6, 2012) and Autocorrosive Equipment Pvt Ltd (October 8, 2012). A similar agreement for licensing had been signed on June 29, 2012 with Standard Glass Lined Equipments Pvt Ltd, Hyderabad.

## WORKSHOP & MEETS

### Indian Science Environment Meet 2012 (August 4, 2012)

The event was jointly organized at the Institute in collaboration with the Millennium Institute of Energy & Environment Management, Kolkata and with the Rotary Club of Calcutta South East. This was an awareness programme for school students about Nature, Science & Environment. It highlighted the responsive role the students need to play. The limelight at the inaugural session was Chief Guest Prof S K Brahmachari who interacted freely with the school students.

He aroused the students with a soulful lecture entitled "Science, God and Environment". He described the latest developments in the field of Biology, Engineering, the interface and latest research opportunities and ambience created by CSIR. He encouraged the students to think beyond their curriculum and to develop innovative abilities. Competitive events such as Essay writing, Debate, Extempore speech, Poster & Quiz were organized. About 200 Students from reputed schools in the city participated.



Prof S K Brahmachari interacting with students

### Surface Engineering and Characterization for Advanced Technological Applications (September 25, 2012)

The half-day workshop was an in-house programme in which renowned speakers from both within and outside CSIR-CGCRl delivered lectures. There were 4 broad lectures, each of an hours duration, on various aspects of characterization of materials. Emphasis was given to the potential aspects of photoelectron spectroscopy, a recently installed facility at CSIR-CGCRl.

### Recent Trends in Engineering and Technology (November 24, 2012)

The Workshop was organized at the Institute by West Bengal Academy of Science & Technology (WAST) with the support of CSIR-CGCRl and IEEE Kolkata Section. There were five detailed lectures on advanced areas of Science & Technology that covered geophysics, electrical engineering, materials science, mechanical engineering and information technology.

## NEW INITIATIVES

### Academy of Scientific and Innovative Research (AcSIR): M.Tech & Ph. D Courses launched

On September 5, 2012, Teacher's Day, CSIR-CGCRl launched integrated M.Tech-Ph.D in Glass & Ceramic Engineering and Ph.D programmes in Science and Engineering under the (AcSIR). In all, 11 students enrolled under the programme: 5 joined Integrated M.Tech - Ph.D, 3 enrolled for Science-Ph.D and the other 3 opted for Engineering-Ph.D.

### CSIR 800 Initiatives



Prof S K Brahmachari watching a slum-dwelling child using the potter's wheel at CSIR 800 Outreach centre

Under the CSIR-800 Foundation effort, an Outreach Centre at CSIR-CGCRl was inaugurated by Prof S K Brahmachari, DG, CSIR on August 4, 2012. The objective of CSIR-800 scheme is to bring about inclusive growth by empowering the economically disadvantaged through constructive scientific & technological interventions. Needless to mention, CSIR-CGCRl has carried out innovative R&D to address the problems of the poor and unprivileged people, particularly in the areas of low cost pottery and waste utilization. DG, CSIR later facilitated a school for slum children, Sevashree inside CSIR residential campus, SIRSA at, 59 Lake Road, Kolkata. Thanks to the benevolence of a few individuals, the school has been providing free primary level education to poor children. The Outreach Centre has been established to impart vocational training in pottery making to such children so that they can pick up technical skills and become self-employed while spreading the message of CSIR 800.



Pupils and teachers with Prof S K Brahmachari and Prof I Manna at Sevashree

## HINDI WEEK

Hindi week was celebrated from September 12-18, 2012. It was inaugurated by Mrs Phool Kumar Roy, Ex-Assistant Director, HTS, Department of Official Language, Govt of India. In her address, she impressed upon the need and utility of Hindi language in our lives.



Dr R K Bhandari delivering lecture.

A major aspect of the celebration was the initiation of the Diamond Jubilee lecture series on September 18, 2012. Dr R K Bhandari former Director, VECC, Kolkata, who graced the occasion as the Chief Guest spoke on 'Use of Nuclear Energy'. The speaker enlightened the audience about the potential utilization of nuclear energy in the areas of pest control, food preservation, medicines etc. Prior to the lecture, Guest of Honour poetess Mrs Ajanta Deb, addressed the staff and recited a couple of her compositions.

Competitions on Quiz, Poetry recitation and Noting, Drafting and Terminology writings were also arranged to popularize the use of official language among the staff. Winners were awarded.

## FORTHCOMING EVENTS

- International Workshop on Recent Advancement in Membranes for Liquid & Gas Filtration on December 27, 2012 at CSIR-CGCRl, Kolkata