



# CSIR-CGCRI

## NEWS LETTER



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Diamond Jubilee Year, August - November 2011

### Peer Recognition

#### Dr Kaushik Biswas Wins CSIR Young Scientist Award



Dr Kaushik Biswas receiving Young Scientist Award from Shri Vilasrao Deshmukh, Minister of Science & Technology and Earth Sciences, Govt of India

Dr Kaushik Biswas, Scientist, Glass Division received CSIR's Young Scientist Award in the Engineering & Physical Sciences Category for the year 2011. He received the award at a function along with the recipients of the awards in other categories on the occasion of 69<sup>th</sup> CSIR Foundation Day at CSIR Head Quarters, New Delhi for his contribution towards development of rare-earth doped fluoride nano-crystal containing transparent glass ceramics which represent promising future materials.

Dr Biswas obtained his B Tech (Ceramic Technology) from Calcutta University and M Tech (Materials Science and Engineering) from Indian Institute of Technology, Kharagpur.

### Dr R N Basu Wins Metallurgists' of the Year Award

Dr Rajendra Nath Basu, Chief Scientist and Head, Fuel Cell & Battery Division received the METALLURGISTS' OF THE YEAR AWARD from the Ministry of Steel, Government of India for the year 2011 for his significant contributions in the area of Energy, Environment and Waste Management. This prestigious Award is selected through an All-India selection process conducted by the Indian Institute of Metals (IIM). The award was conferred on Dr. Basu at the 49th National Metallurgists' Day and 65th Annual Technical Meeting of IIM on November 14, 2011 at Leonia International Centre for Exhibitions and Conventions, Hyderabad. The award consisted of a Scroll of Honour and a cash prize of Rs. 75,000/-. Dr Basu received the award from Mr P K Mishra, Secretary, Ministry of Steel, Government of India.

### Poster Award

A research paper entitled "Studies on Colour Removal of Rice Bran Oil-Hexane Miscella" by Biswajit Roy, G C Sahoo, S N Roy and S Bandyopadhyay of Ceramic Membrane Division was awarded Best Poster Award (2nd Prize) in the International Conference on Innovations in Oils, Fats & Allied Products towards Sustainability & Lipids Expo-2011 (IOFATS-2011) organized by Oil Technologists' Association of India (SZ) held during November 18-19, 2011 at CSIR-IICT, Hyderabad.

### Seminar & Conferences

#### International

#### Conference on Specialty Glass and Optical Fiber: Materials, Technology and Devices (ICGF-2011; August 4-6, 2011)

The focus of the conference was to evolve a consensus on the R&D issues and challenges in the fields of specialty glass and optical fiber for future through fruitful deliberation and discussions. Dr K Kasturirangan, Member (Science), Planning Commission was the Chief Guest while Dr R K Sinha, Director, BARC, Mumbai was the Guest of Honour.

Prof Indranil Manna in his welcome address presented a brief outline of the Institute to the audience. Chief Guest Dr Kasturirangan lauded CSIR-CGCRI's role in mission areas of water, energy, environment & rural development. He opined that these are the areas where the country can expect key inputs from the Institute. Dr Kasturirangan cited an Egyptian quote that growth of glass industry was an indicator of a country's economic growth. He hoped that the Institute would play an important role in the transformation of CSIR. He described how glass is relevant to space research and emphasized that research should be directed towards development of new materials that are inspired by nature. Dr R K Sinha, Guest of Honour urged that CSIR-CGCRI must be proud of its achievements. He congratulated the Institute in its Diamond Jubilee year. Dr Sinha presented the keynote address. The Chief Guest inaugurated an exhibition after the inaugural session.



*Clockwise : Dr K Kasturirangan lighting the lamp during inauguration, Dr R K Sinha delivering his keynote address, Prof I Manna taking Dr Kasturirangan around stalls at exhibition and view of a session under progress during ICGF*

The ICGF 2011 saw several sessions which included two keynote lectures, eight plenary lectures and 30 invited lectures. There were twenty overseas delegates from USA, Czech Republic, UK, Germany, Mexico, Poland, Australia and Finland respectively. In all, there were 19 contributory oral sessions; 12 in the specialty glass and 7 in the specialty fiber categories. In addition, there were two poster sessions which displayed a total of 85 (62 in specialty glass and 23 in fiber categories) posters. Selected posters were awarded. A total number of 250 candidates registered in the conference. Around 50 delegates represented the host Institution. There was a separate session for industry delegates.

The ICGF 2011 led to fruitful interactions with a number of Institutes and Universities both in India and abroad for collaboration on few contemporary areas for innovative R&D work and futuristic applications. These organizations were: Humboldt-Universitat zu Berlin, Germany; Institute fur Chemie, Berlin; Institute of Physics, Jan Dlugosz University, Czestochowa, Poland; NSF's International Materials Institute for New Functionality in Glass, Lehigh University, USA; Department of Materials Science and Engineering, Sheffield University, UK; Institute of Photonics Technology, Jena, Germany; City University, London, UK; Nextrom Technology, Finland; Samtel Glass Ltd., Kota, India. Most of the dignitaries from abroad appreciated the world class infrastructure facilities established by CSIR-CGCRI for R&D work in the areas of specialty glass & optical fiber. The conference received major sponsorship from both government and industry.

## National

### *Workshop on CSIR-800 Programme and CSIR-CGCRI Technologies for Drinking Water and Sanitation (August 18-19, 2011)*

The workshop was organized to disseminate the knowledge of Institute's success in water purification and sanitation technologies and develop social entrepreneurship for inclusive growth and enhancement in the life standards of poor people. This was in spirit with the goal and objectives of CSIR-800 programme that is aimed to solve problems of poor people living below poverty line by S&T interventions. The event was organized in collaboration with the Technopreneur Promotion Programme (TePP) of the Department of Science & Technology, New Delhi. Swami Sampurnananda, Secretary, R K Mission Ashram, Narendrapur, West Bengal graced the occasion as the Chief Guest while Dr P G Rao, Director CSIR-NEIST and Dr E Desa, Former Director, CSIR-NIO, Goa and CSIR Consultant Designate on CSIR 800 Programme were the Guest of Honours.

Unlike the conventional workshops, the event was designed to foster direct interaction among scientists, planners, self-entrepreneurs, workers and artisans engaged in mainly water purification and sanitation technologies. One of the major items of the event was a panel discussion on Implementation Strategies on Drinking water and Sanitation in which experts from government, industry and academia participated. The panelists spoke of the practical hurdles associated with the implementation and sustainability of water technologies. There were three technical sessions (one held in parallel mode), one interactive session and a valedictory session. The technical sessions deliberated on issues such as Societal Mission and Social Entrepreneurship Development, Drinking Water, Low Cost Sanitarywares, Traditional Potteries and Artwares and CSIR Technologies and Improvement in Quality of Life through S&T Intervention.

The session on Drinking Water saw presentations on key issues as potable water, brackish water purification, wastewater management, pollution control of freshwater etc. A beneficiary entrepreneur narrated his company's stint on utilization of CSIR-CGCRI technologies for arsenic and iron removal from contaminated water. In the session on Low Cost Sanitaryware, planners, scientists, rural artisans and entrepreneurs interacted directly across the table. The deliberation emphasized on the role of state government agencies to identify entrepreneurs who could promote the rural artisans to fabricate products based on CSIR-CGCRI technology. The artisans in general agreed to the importance of sanitation and hygiene in rural ambience. Importance was given on the utilization of locally available low cost materials for setting up small scale sanitaryware industries. Presentations on red clay pottery and utilization of solid industrial wastes in fabrication of low cost construction materials during Improvement in Quality of Life through S&T Intervention session by CSIR-CGCRI scientists reflected the potential of the work done by the Institute to raise the life standards of small and medium entrepreneurs and poor artisans.

The interactive session touched on the issue of sustainable water management/exploration of drinking water sources, groundwater quality, techno-entrepreneur promotion programme etc. Few entrepreneurs who have propagated the CSIR-CGCRI's ceramic membrane technology to the masses were awarded in this session. In the valedictory session, Dr E Desa summed up his observations of the two-day programme in his presentation. A training programme was arranged on the making of clay based artware at the end of the event. About 200 delegates from different walks of society participated.

In an attempt to permeate the message of CSIR-800 programme fast across society's grassroots level, the organizers invited the teachers and students of a local primary school imparting education to children growing in one of the nearby slum areas. Nearly 20 slum children along with few teachers attended the first day of the programme.



*Clock wise : Chief Guest Swami Sampurnananda lighting the lamp, a view of panel discussion, an entrepreneur being awarded with certificate and delegates assemble for a group photo*

### Workshop on Recent Challenges and Innovations in Castable Refractory Technology (ICRT-2011; September 5, 2011)

The workshop was jointly organized by CSIR-CGCRI and Kerneos Aluminate Technologies in the Meghnad Saha Auditorium.

The objective of the event was to address the recent challenges in castable refractory technology. The one day workshop deliberated upon new refractory aggregate and binder, product and applications for ferrous and non-ferrous industries, quality control & testing and challenges and solutions.

## Events

### 8<sup>th</sup> Atma Ram Memorial Lecture



Prof D D Sarma delivering memorial lecture

Prof D D Sarma, Distinguished Scientist, CSIR and Professor, Solid State and Structural Chemistry Unit, Indian Institute of Science, Bangalore delivered the lecture entitled "Semiconductor nanocrystals : How do they grow and why do they glow" on August 26, 2011 in the Meghnad Saha Auditorium. The lecture session was chaired by Prof Siddhartha Roy, Director, CSIR-IICB. The lecture was highly informative and was well received by the guests and audience.

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

CSIR Foundation Day was celebrated on September 26, 2011 with utmost devotion and fervour. Prof Sibaji Raha, Director Bose Institute was Chief Guest while Dr C Ganguly, Former Director, CSIR-CGCRI and currently President, Cameo India Office, Hyderabad was Guest of Honour. Prof N C Mandal, Former Professor, Biochemistry Unit, Bose Institute, Kolkata delivered the Foundation Day Lecture on "Acharya PC Ray : Life and Times" on his 150<sup>th</sup>



Chief Guest Prof Sibaji Raha greeted by Prof I Manns, Prof N C Mandal delivering Foundation Day lecture



Dignitaries assemble before floral art work

birth centenary year. Dr S K Lahiri, Former Director Grade Scientist of CSIR-CGCRI was also invited on this occasion. Dr Lahiri summed up the Foundation Day lecture paying rich tributes to Acharya's contribution to science and society. Twentyone persons who superannuated since the last CSIR Foundation Day were felicitated with shawl and certificate on this occasion. Eight staff members who completed 25 years service in CSIR were also felicitated with wrist watches.

## Internal Innovation Awards

Bright young researchers and dedicated staff were internally awarded on September 26, 2011 to promote innovation and efficiency at levels

### Best Paper

Published in Glass and Ceramic Journals : A Tarafder, A R Molla and B Karmakar "Processing and properties of Eu<sup>3+</sup>-doped transparent YAG (Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub>) nanoglass-ceramics", J Am Ceram Soc, 2010, 93, 3244-51.

Published in Materials Science related Journals: B Kundu, C Soundrapandian, S K Nandi, P Mukherjee, N Dandapat, S Roy, B K Datta, T K Mandal, D Basu and R N Bhattacharya, "Development of new localized drug delivery system based on ceftriaxone-sulbactam composite drug impregnated porous hydroxyapatite; A system approach for in vitro and in vivo animal trial", Pharm Res, 2010, 27, 1659-76.

### Best Young Researcher

**Scientist under 35 years:** Mr Mitun Das of Bio-ceramics & Coating Division for his work on Laser Processing of Hard Coatings on Titanium: Possible Application in Biomedical Implants.

**Research Scholar under 35 years:** Mrs Manjusha Chakraborty of Bio-ceramics & Coating Division for her work on Inorganic-organic conjugate nanocarriers for targeted delivery of anticancerous drugs: A possible miracle to cancer treatment.

**Best Project Award:** Dr R N Basu, Dr A Das Sharma, Mr J Mukhopadhyay, Mr Suman Das, Mr Satyendra Nath Barik of Fuel Cell & Battery Division for the project "Upgradation of expertise base for R&D activity on SOFC materials at Energy Research Institute, KACST, Saudi Arabia (Phase-II)" funded by Energy Research Institute, KACST, Saudi Arabia.

**Best Support Section:** Recruitment & Assessment Section.

**Best Employee:** Mr Chittabrata Chowdhury, Sr Technician (1) of Fleet Management Section.

## Prizes for Meritorious Wards

On the occasion of the 69th CSIR Foundation Day, Miss Angana Naskar, D/O Mr L Naskar, Sr Technician-(III) and Master Poulab Chakrabarti S/O Dr O P Chakrabarti, Sr Principal Scientist were awarded lump sum cash award of Rs 3000/- each for securing 90% and above marks in three science subjects in Higher Secondary Examination 2011 conducted by West Bengal Council of Secondary Education.

## New Facilities

### Differential Scanning Calorimetry (Model Lab Sys)

The equipment has been installed in the Glass Division. It is used for studying differential melting and crystallization of glass and other materials.

### Class 10,000 (CLASS-C) Clean Room and Mask Aligner



Clean Room



Mask Aligner

The equipment Mask Aligner for MEMS applications has been housed inside a lithography room with in Class 10,000 (CLASS-C) Clean Room at the Sensor Hub set up with the sponsorship of CSIR and DST, New Delhi. It is used for fabrication of MEMS samples.

## Hindi Week Celebrated



Prof Jagdishwar Chaturvedi delivering his address

Hindi Week was celebrated from September 14-20, 2011 at the Institute. During the week Shri Amal Sekhar Karan Seth, Sr Manager, United Commercial Bank, Kolkata trained the participants on Unicode in computers. The Chief Guest on the Concluding Day was Prof Jagdishwar Chaturvedi of Calcutta University. Speaking on this occasion Prof Chaturvedi said that with the advent of satellite technology, Hindi had become a global language.

## Visit of CSIR Team on Official language

A high power team from CSIR Head Quarters visited the Institute on November 17, 2011 and trained the officers on official language implementation with the help of computers. The team also reviewed the status of official language implementation.

## Vigilance Awareness Week Observed

The week was observed from October 31 to November 5, 2011 in the Institute.



Inauguration of vigilance week

The week starts every year on October 31, which is the birthday of Sardar Vallabh Bhai Patel who exercised major influence in establishing the administrative structure of India. This year theme of observing Vigilance Awareness Week was "Participative Vigilance". In view of it, on November 3, 2011, Prof K L Chopra, Former Director, IIT, Kharagpur and presently President, Society for Scientific Values and Associate Editor of International Journal of Solar Energy Materials and Solar Cell, New Delhi delivered a lecture entitled "Ethical Issues in Scientific Research". Prior to this day, Shri Sridev Nanda, SPO, CSIR spoke on "Participative Vigilance with Special reference to Materials Management in CSIR". An interactive/informative session was held on November 4, 2011 for administrative personal on Conduct Rules, Disciplinary Proceedings for implementing a user friendly administrative interface for all.

## 44<sup>th</sup> Research Council Meeting

The 44th Research Council Meeting was held on November 2, 2011 in the Atma Ram Committee Room of the Institute. Dr Srikumar Banerjee, Secretary, Department of Atomic Energy and Chairman, Atomic Energy Commission, Govt of India, chaired the open and closed sessions of the Research Council. The RC recommended the extension of few missioned projects in strategic and societal sectors beyond the current five year plan.

## Bereavement

Shri Pranab Nandi, Senior Technical Assistant, Materials Characterization Division of CSIR-CGCRl breathed his last on August 13, 2011. The editorial board deeply mourns his untimely demise.



## Forthcoming Events

**January 6-7, 2012**

Indo-Japan International Workshop on Specialty Optical Fiber, Nano-photonics and Devices at CSIR-CGCRl, Kolkata

**January 19-21, 2012**

International Conference on Invention, Innovation & Technology (ICIIT-2012), in collaboration with IAPQR at CSIR-CGCRl, Kolkata