



CSIR - CGCRI

NEWS LETTER

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TECHNOLOGY NEWS

Agreement for Transfer of Technology on Manufacture of Plasma Spray Grade Hydroxyapatite Granules

CSIR-Central Glass and Ceramic Research Institute, Kolkata has signed a licensing agreement on manufacture of plasma spray grade hydroxyapatite granules with M/s Orthotech, Valsad, Gujarat on April 22, 2016. Orthotech, an FDA, ISO 9001-2008 and ISO 13485-2003 certified company is registered in India under the Companies Act, 1956. The license has been granted to the party for utilization of the knowhow and sell the product in the country on non-exclusive basis for a period of three years. As per the agreement, CSIR-CGCRI shall arrange for the training of two qualified personnel of Orthotech on the implementation of the knowhow within a period of six months from the effective date of signing. CSIR-CGCRI will also handover the technology transfer document to Orthotech within seven months from the effective date. CSIR-CGCRI will provide the ethical clearance and related documents for aforesaid products. The total cost of the technology is Rs 20 lakhs plus services taxes.



Exchange of document with Othotech officials

It may be added here that the same technology has also been transferred on May 31, 2016 to M/s Emporis Implants and Surface Treatment, Navsar, Gujarat also on similar terms and basis at a price of Rs 25 lakhs. The license has been granted to the Emporis for utilization of the knowhow and sell the product in the country on non-exclusive basis for a period of three years.

Agreement for Transfer of Technology on Manufacture of Plasma Spray hydroxyapatite coating on metallic biomedical implants

CSIR-CGCRI has transferred on May 31, 2015 another technology entitled manufacture of plasma spray hydroxyapatite coating on metallic biomedical implants to Emporis Implants and Surface Treatment to utilize the know-how to make use and sell the product. Under the agreement, CSIR-CGCRI will train a couple of personnel of the said company and demonstrate the knowhow to them within 6 months of the effective date of technology transfer. CSIR-CGCRI will transfer the know-how documents to Emporis within seven months of the effective date along with the ethical clearance and related documents. The Institute has granted the license on non-exclusive basis to Emporis for a period of three years from the date of signing of agreement.



Exchange of document with officials of Emporis Implants and Surface Treatment

In all the agreements narrated above, the beneficiary parties Orthotech and Emporis shall employ a product label or a plate with inscription of 'CSIR-CGCRI KNOWHOW' on every product and/or packaging mode. Similarly every advertisement, hoarding, technical literature, publicity and the like material in respect of or relative to the product issued by beneficiary shall include the same inscription as aforesaid.

WORKSHOP/SEMINAR/MEETING

Biomedical Implants for Orthopaedics: Leveraging Efficacy through Alliance Programs (BIO-LEAP 2016; April 21-22, 2016)

The national workshop was organized by the Institute at CSIR-CGCRI. The Chief Guest on the occasion was Maj Gen Dr A K Nandi, Commandant CMDC (EC) and Command Dental Advisor (EC), Kolkata while the Guest of Honour was Dr K H Sancheti, Director, SIOR, Pune. The aim of the workshop was to review, update and advance the development, manufacturing and clinical use of Indian biomedical materials and devices.

Indian healthcare spending has been estimated as \$ 6.3 billion in 2013. CII-BCG report indicated that it had potential to reach \$ 50 billion by 2025. However, more than 90% of these implants/devices are currently being imported and are not affordable by majority of Indian patients due to exorbitant cost. In connection with 'Make in India' program lunched by Hon'ble Prime Minister of India, the need for innovation and global competitiveness in manufacturing of medical devices/orthopaedic implants is imperative for the country's self-reliance and long-term growth.



BIO-LEAP 2016 : Delegates with Chief Guest and Guest of Honour seen in the Middle of front row

This workshop provided well balanced and state-of-the-art technological views, needs and capabilities of surgeons, industries and scientists. During the workshop two 'Brainstorming Sessions' were conducted to gather the views of surgeons, industries and scientists with an aim to laydown strong foundation accelerated innovation through effective, multi and cross disciplinary alliance programs consisting surgeons, industries and scientists. The success is that the workshop has been fully sponsored by biomedical industries. A large of renowned surgeons, doctors, materials scientists and engineers from prestigious hospitals and Institutes presented their view points in the event.

Interactive Meeting of the All India Glass Glass Manufacturers' Federation (AIGMF; June 25, 2016)

The All India Glass Manufacturers' Federation (AIGMF) held an Interactive session in collaboration with CSIR-CGCRI at the Institute. The session was held under the spirit of Swachh Bharat Abhiyan (Clean India Campaign) in which the delegates projected glass as an excellent building and packaging material that would help catalyze clean India drive. A parallel session on Glass Packaging was also held in which use of glass as a safe and sustainable packaging material was discussed and debated.

Dr K Muraleedharan, Director, CSIR-CGCRI said that although every material has advantages and disadvantages but in the wake of current cleanliness drive, the glass industry was well poised compared to many other industries. AIGMF President Mr Sanjay Ganjoo said that the glass industry has stepped forward to promote glass as utility for modern building and packaging material ever since the present Government's declaration for

clean India and Smart cities in the country. AIGMF's Vice-President, Mr A K Dukkipati made a presentation on the Need of Glass Packaging for Health and Environmental Reasons in which he said that glass can be recycled infinitely and every ton of glass recycled can save energy, carbon dioxide and virgin raw materials. He later showed a video in which he quoted a Swedish report to suggest that plastic packaging contaminates food with endocrine disrupting chemicals.



Mr Sanjay Somany greeting Dr K Muraleedharan with a pack of glass bottles as a gesture of eco-friendly product

Dr A K Bandyopadhyay, Member, Editorial Board of AIGMF journal Kanch said that glass is always a natural choice as a container for food and beverages; It should be the packaging material of choice for medicines particularly those for pregnant women and children. Mr Sanjay Somany, Vice Chairman & Managing Director of Hindustan National Glass & Industries Limited (HNIGL) said during interactive session that there was need for light and hard glasses to increase the use of glass bottles in packaging. Dr Ranjan Sen, Chief Scientist & Head and Dr Basudeb Kamakar, Sr Principal Scientist of Glass Division in CSIR-CGCRI made presentations on the leads achieved in the area of strategic and commercial glasses by the Institute.

As CSR initiative, AIGMF gifted 300 glass water bottles specially manufactured by HNIGL to CSIR-CGCRI. The bottles carried a logo of Swachh Bharat Abhiyan along with a caption: Use Glass, it is ecofriendly written on surface. Mr Ganjoo congratulated CSIR-CGCRI for adopting use of glass bottles in its premises; The Institute has distributed the bottles among its different departments/Sections which is a positive step towards clean environment.

Technology Thrusts on Materials & Manufacturing Sector in India (TTMM-2016; July 28-29, 2016)

The Seminar was jointly organized by CSIR-CGCRI, Millennium Institute of Energy & Environment Management (MIEEM), Kolkata, Indian Institute of Metals (IIM), Kolkata Chapter in association with Technology Information, Forecasting and Assessment Council (TIFAC) of Department of Science & Technology, New Delhi. The impetus behind this event was drawn from Technology Vision: 2035 document prepared by TIFAC and dedicated to the memory of Dr AP J Abdul Kalam, the sixth President of India. In view of it, the event was used as a platform to commemorate Dr Kalama's contributions to national development. It may be recalled that official document 'Technology Vision 2035' of TIFAC was released by the Prime Minister of India at the 103rd Indian Science Congress in January 2016. In order to accelerate the implementation of the vision envisaged in the document, the seminar discussed and deliberated on the said vision document. The 2-day seminar covered four out of the 12 thematic areas identified under vision. These areas were namely (i) Materials & Manufacturing Technologies (including mineral extraction and processing), (ii) Energy Technologies (covering the Industry, Agriculture and Urban Utility services), (iii) Environment (covering the industrial and urban pollution issues as well as the route towards

sustainable development) and (iv) Wealth from Wastes : Innovative Research & Application Process Technologies.

The Chief Guest in the Inaugural Session was to be Dr V K Saraswat, Member (Science), NITI Ayog who could not join because of sudden official engagement. Dr Anil Kakodkar, Chairman, TIFAC took over the role of Chief Guest. The other important dignitaries were Dr Srikumar Banerjee, Homi Bhabha Chair Professor, Department of Atomic Energy and Chairman, Research Council, CSIR-CGCRI, Mr L Pugazhenthly, Chairman, Advisory Committee on Materials, TIFAC and Dr Prabhat Ranjan, Executive Director, TIFAC.



Address by Dr Anil Kakodkar

In his welcome address, Dr K Muraleedharan, Director, CSIR-CGCRI welcomed the dignitaries and delegates and gave a brief outline of the Institute's activities. Dr Muraleedharan said that the Institute has made significant contributions in five out of twelve identified themes and was committed to improve the standards of life of common people through faster track translation projects, a scheme envisaged by DG, CSIR. Dr Anil Kakodkar put forth the meaning of technology as a process and the accompanied hurdles during technology transfer. He highlighted the initiatives taken by TIFAC to streamline the process for benefit of common man. Dr Srikumar Banerjee spoke on similar vein and stated that several technologies were developed in the country for the first time from CSIR-CGCRI but the innovations could not meet with equal success in terms of commerce due to hurdles in transfer process. He emphasized on the need for creation of system for faster translation of scientific innovations in the country. Mr. L Pugazhenthly spoke on the background of the seminar while Dr Prabhat Ranjan made an excellent presentation of the global developments in materials and manufacturing and TIFAC's initiatives to implement them through sustained projects at the national level.



Release of Technology Vision Document for Materials and manufacturing

On this occasion, The Technology Vision Document for Materials and Manufacturing was released by the dignitaries from podium. The dignitaries also went round the display pavilions to observe the products and processes developed by CSIR-CGCRI. The Chief Guest and other important dignitaries also sowed variety of plants in the lawns of CSIR-CGCRI. The publicity media especially Door Darshan extensively covered the inaugural programme.



Dr RN Basu, Head, Fuel Cell and Battery Division explaining Dr Anil Kakodkar SOFC components developed at CSIR-CGCRI. Dr Muraleedharan is in between and Dr Srikumar Banerjee is seen on left extreme

There were 17 oral papers presented over various technical sessions by delegates from Government, industry and academia. A panel discussion was also held in which several speakers spoke on the various issues of materials and manufacturing sector to help project the necessary roadmap for year 2035. The seminar was attended by more than 150 delegates. A cultural function was organized in the evening of 28th July in which Mr Debanjan Bhattacharjee a young engineer cum artist made a brilliant recital of Sarod to the applaud of audience.

IMPORTANT EVENTS

Technology Day

CSIR-CGCRI celebrated National Technology Day on May 31, 2016. Mr Kamal Dasgupta, Chief Scientist and Head, Fibre Optics and Photonics Division, who superannuated on this day delivered the National Technology Day Lecture on 'Technology Developments at Fibre Optics and Photonic Division'. Special Technology Day Lectures were organised. Mr Sitendu Mandal, Senior Principal Scientist & Head, SGPS, Glass Division addressed on 'Technology Development of Specialty Glasses for Strategic Sector'. Dr. Vamshi Krishna Balla, Senior Principal Scientist and Head, Bio-Ceramics and Coating Division addressed on 'Recent Technologies Developed at Bio-Ceramics and Coating Division'. Dr. Arup Ghosh, Chief Scientist and Head, Refractories and Traditional Ceramics Division addressed on 'Recent Technologies Developed at Refractories and Traditional Ceramics Division'. Mr Swachchha Majumdar, Principal Scientist, Ceramic Membrane Division addressed on 'Recent Technologies Developed at Ceramic Membrane Division'. After that, awards were distributed by Director for Best Technologies, Best Developmental Projects followed by Staff Awards.



Mr K Dasgupta (middle) being felicitated with plaque by Dr K Muraleedharan while past colleagues Dr T K Bandyopadhyay and Dr S K Bhadra look on. Dr Ranjan Sen present Head FOPD is seen on left extreme

Internal Awards

Awards for best technologies transferred by the Institute for years 2014-15 and 2015-16 are as follows:

2014-15

Production of Glass Beads/Nodule transferred to M/s H & R Johnson (India), Mumbai.

2015-16

Agreement for Transfer of Technology on Manufacture of bioactive ceramic scaffolds/granules and integrated orbital implant transferred to General Surgical Company (India) Pvt. Ltd. (GESCO), Chennai.

Twenty five junior staff were also awarded for the said years. These staff hailed from R&D, R&D Support, Administration and Purchase wings of the Institute.

AWARDS & HONOURS

Invited Talks

Dr Goutam De, Head and Chief Scientist, Nanostructured Materials Division was invited to deliver the talks as follows:

- (i) Functional Nano Materials and Coatings at the 61st Orientation Programme, organised by University Grants Commission- Human resource Development Centre, Jadavpur University, Salt Lake Campus from June 13-July 11, 2016 Also delivered a talk 'Functional Nano Materials and Coatings' as a resource person on June 28, 2016.
- (ii) Nano Materials and Coatings for Energy and Sustainability at 2nd National Workshop on Development of Nanomaterials for Energy, Environment and Sustainability (DNEES-2016) held during May 9-10, 2016 at Siksha O Anusandhan University, Bhubaneswar.

Dr P Sujatha Devi, Head and Principal Scientist, Sensor & Actuator Division was invited to deliver the talks as follows:

- (i) Functional Nanomaterials : Synthetic Strategies, Properties and Applications during the Short Course on Nanotechnology: From Fundamentals to Practices organized during June 13-17, 2016 under the Global Initiative on Academic Network (GIAN) by Ministry of Human Resource Development at Indian Institute for Science, Education and Research (IISER), Thiruvananthapuram.
- (ii) Nanomaterials for Drug Delivery and Medical Diagnostics in National Workshop on Technology Upgradation and Pharmaceutical Promotion from July 29-30, 2016 at NIPER-Kolkata.

Oral Awards

Dr Arindam Saha, CSIR Nehru Post -doctoral Fellow, Sensors & Actuators Division received 2nd prize for his paper, 'Highly Reproducible and Sensitive Detection of Small Organic Pollutants via Reduced Graphene Oxide based 'Turn-On' Fluorescent Sensor' in the Third International Conference on Nanotechnology for Better Living held during May 25-29 at National Institute of Technology, Srinagar.

Poster Awards

Chandrima Ghosh, **S Pasari**, **A. Ghosh**, **S Sinhamahapatra** of Refractory and Traditional Ceramics Division received the Best Poster Presentation Award for the paper entitled 'Plasma Fused Magnesium Aluminate Spinel from Indian Natural Magnesite' in the International Conference on Advances in Engineering & Technology (ICAET-2016) held during April 4th-5th, 2016 at Government College of Engineering and Ceramic Technology, Kolkata. **Shreyasi Chattopadhyay**, **Manish Kumar Mishra** and **Goutam De** received the Best Poster award for their paper 'Hierarchical TiO₂ Hollow Spheres Decorated with Functionalized Graphitic C Dots' at the 2nd National Workshop on 'Development of Nanomaterials for Energy, Environment and Sustainability (DNEES-2016)' held during May 9-10, 2016 at Siksha O Anusandhan University, Bhubaneswar.

COLLOQUIUM

Internal

Dr Mukul Pradhan, a DST Inspire Faculty 'Novel Biocompatible Nanocomposites for SERS Based Sensing of Biomolecules and Toxic Metal Ions'.

LECTURES

April 4, 2016 : **Dr. Shibayan Roy**, Assistant Professor, Materials Science Centre, IIT, Kharagpur delivered a lecture on 'Introduction to Electron Backscatter Diffraction (EBSD) and its Implication in Materials Research'.

April 22, 2016 : **Dr Shyam Chetty**, Director, CSIR-NAL delivered a lecture entitled 'Materials Technologies from CSIR-NAL'.

June 6, 2016 : **Dr Subrata Majumder**, Assistant Professor, Department of Physics, National Institute of Technology, Patna delivered a lecture entitled 'Biomolecules on Oxide Nanopatterned Surfaces and their Sensor Applications'.



Dr Shyam Chetty, Director, CSIR-NAL delivering lecture

July 12, 2016 : **Dr. Nimai Mishra**, Post-doctoral fellow, Center for Integrated Nanotechnologies, Los Alamos National Lab, USA delivered a lecture on 'Shape Control in Semiconductor Nanocrystals: Synthesis, Characterization, Assembly and Device Fabrication'.

July 21, 2016 : **Dr Harsh Chaturvedi**, Visiting Assistant Professor, Centre of Energy, IIT, Guwahati delivered a lecture on 'Functional Nanomaterials: From Colloidal Solution to Smart Devices'.

YOGA DAY

International Day of Yoga was observed on June 21, 2016 at our Institute. The World Yoga Society supported the programme by deputing their trainers and executives who conducted yoga session. CSIR-CGCRI, Naroda outreach also conducted a programme on this occasion.



Staff undergoing yoga session

FORTHCOMING EVENTS

- ✉ **September 7, 2016**: 13th Atmaram Memorial Lecture.
- ✉ **September 9, 2016**: National Seminar on Advancement in Refractory Technology : Current Trends.
- ✉ **September 26, 2016**: 74th CSIR Foundation Day: Inauguration of Platinum Jubilee Year.
- ✉ **January 23-25, 2017**: International Conference on Advance in Glass Science and Technology 2017 (Tutorial : January 19-21, 2017).
- ✉ **February 16-17, 2017**: 2nd International Conference on Alumina and Other Functional Ceramics (AOF-2017).