

# CECRI *news*

**CENTRAL ELECTROCHEMICAL RESEARCH INSTITUTE, KARAIKUDI - 630006**  
[Council of Scientific and Industrial Research]

**November - December 2008**



Phone : +91 4565 227550 - 59  
Fax : +91 4565 227713  
+91 4565 227779  
Gram : CECRI

Compiled by e-library and ICP, CECRI



**Central Electrochemical Research Institute**  
**Karaikudi 630006**  
**Tamilnadu, India**  
e-mail: [director.cecric@gmail.com](mailto:director.cecric@gmail.com)  
website: [www.cecric.res.in](http://www.cecric.res.in)

## CSIR Programme on Youth for Leadership in Science (CPYLS)

CSIR Programme on Youth for Leadership in Science (CPYLS) was organized at CECRI, Karaikudi during 22-24 December 2008. Twenty six students, who are district-level toppers in the School Final (10th Standard) examinations held in March/April 2008 and currently studying in 11th Standard participated in the programme along with their parents/guardians/teachers. Professor A K Shukla, Director, CECRI presided over the inaugural function held on 22nd December 2008 at 9.30 a.m. In his inaugural address, Professor Shukla explained how science, especially the basic science forms the precursor to the technology development and consequently to the economic



development of the nations. He stressed the need for the youngsters to choose science as their career. Earlier, Dr. V. Yegnaraman, Chairman, CPYLS welcomed the participants and highlighted the activities of CECRI and the objectives of CPYLS. The participants were presented an educational kit consisting of science books and materials as a token of appreciation of their excellent academic achievements.

On 22nd and 23rd, the forenoon sessions were devoted to a series of popular science lectures, viz. "Growth of Science", "Scientific Awareness", "Nano Science & Technology", "Computer & Internet", "Appreciation of Mathematical Sciences", "Scope in Chemical Sciences" and "Advancements in Bio-technology". In the afternoon on both days demonstration/hand-holding experiments/practicals on "Principles of Galvanic Cells", Physical Optics & Electromagnetic Effects", Luminescence Phenomenon and Materials", "Hydrogen Generation by Water Electrolysis", "Electroforming", "Corrosion Rate Measurement", etc. were conducted.

On 22nd afternoon, prior to the practical session, a video film on "Renewable Energy and the Power of the Sun" was screened. After the practical session,

special lectures on "Quality Leadership in Science" and "Wonders of Living Beings" were arranged. On 23rd evening after the practical session, a Science Quiz and a lecture-cum-demonstration on "Science/Truth behind Magic" were organized.

On 24th morning, the participants were taken for a visit to a nearby Heritage Centre, 'Chettinad Palace' in Kanadukathan. In the afternoon, "Students Meet Scientists" programme was conducted in which students took active part and got cleared their doubts in science through discussion with the CECRI Scientists.

On December 24th afternoon, Dr. T. Ramasami, Secretary, Department of Science and Technology, Government of India, New Delhi addressed the



participants. In his special address, Dr. Ramasami elaborated the wide-ranging efforts of DST and Government of India to attract young talents towards Science. He narrated the contrasting scientific paths adopted by Sir C.V. Raman and Pandit Jawaharlal Nehru during the pre-independent and early independent India. Sir C.V. Raman focused on pursuit of science with passion for understanding the mother nature. The research was pursued without significant state support and without any specific emphasis on application of science. Pandit Jawaharlal Nehru, on the other hand, believed that science is the only answer for eliminating poverty and achieving economic prosperity for the nation. The national research institutions were set up throughout India for this purpose. Green revolution is a typical example of application of science for social upliftment.

In the present environment the parents focus



on money and evaluate different fields of education purely based on their potential for obtaining attractive jobs. Hence competition and application of science and technology for economic development takes centre stage. The young children are placed in a stressful competitive environment today. To pursue science and technology they have to face too many competitive examinations. These examinations seem to assess the speed of response of the students rather than their spirit of scientific enquiry and analytical skills.

The Government of India is now launching a massive programme, INSPIRE, [Innovation in Science Pursuit for Inspired Research] to attract young talents into science without too much of competition and filtering process. Today around 1.7 crore students are taking up board examinations throughout the country. The top 1% of these students would be around 1.7 lakh students. They will be selected purely based on board examination ranking. All these students would be provided with excellent scholarships to pursue science in their career. Science education will also focus on innovative activity and project based learning. INSPIRE programme ultimately aims at providing 1 million scholarships every year for science education.



India today provides an excellent opportunity for the youth. This is a country full of youth with an average age of 29.8 years. Almost one third of the 1.8 million engineers graduated world over, are Indians. Our research projects are globally competitive price-wise. The Chandrayan project was successful in the very first attempt at much cheaper cost. The Indian medicines for HIV-AIDs are produced much more cost effectively.

In the beginning of 16th century India and China accounted for 43% of global economy. The time is not far off for India to catch up the lost ground and become a dominant world economy in the world. We need to create an innovative science based younger generation for achieving these goals. DST and the Government of India will do

everything possible for achieving this ambitious goal, Dr. Ramasami said.

Towards the end, a 'Feedback' Session was held, in which the students and teachers/parents pointed out that the programme was very much useful for the students and all the lectures were thought provoking. Parents, teachers and students expressed their whole hearted thanks and appreciated this programme.

In the Valedictory Function, Dr. V. Yegnaraman, Chairman, CPYLS distributed the certificates to the participants and responded to the views and queries of the participants. At the end, Shri R. Rajasekar, Convener, CPYLS summed up the programme and expressed vote of thanks.

## **International Conference on Electrochemical Power Systems (ICEPS-2008)**

The third edition of the quadrennial International Conference on Electrochemical Power Systems (ICEPS-2008) was jointly organized by SAEST and CECRI between the 26th and 28th November 2008 at Thiruvananthapuram.

The conference drew 224 delegates including 32 from overseas. The conference opened with an inaugural address by Professor Daniel A. Scherson, Editor of the Journal of the Electrochemical Society, and Professor of Chemistry at the Case Western Reserve University, USA.

This year's event witnessed presentations by people of eminence in the area of electrochemical power systems from across the world. The themes covered included primary and secondary batteries, fuel cells, supercapacitors, nanomaterials for energy storage devices, industrial production of batteries, fuel cells and supercapacitors, photoelectrochemical and photovoltaic materials and systems, and batteries for electric vehicles, military and space applications. Apart from the inaugural lecture, the conference saw a plenary lecture by Professor N. Chandrakumar of IIT-Madras, Chennai, 25 invited lectures, and presentation of another 26 papers in the oral and 140 papers in the poster sessions. There was also a session in which major sponsors could present their company profiles. An industrial exhibition was also arranged at the venue.

### **Visit of foreign scientists**

We have invited the following foreign

Scientists to CECRI to have interactions with our Scientists and B. Tech students during their stay in India while their participation in the International Conference on Electrochemical Power Systems 2008 organized by the SAEST at Thiruvananthapuram during November 2008.

Professor Daniel Scherson, Department of Chemistry, Case Western Reserve University, Cleveland, USA visited on 24th November 2008.

Professor Prashant V Kamat, Department of Chemistry and Biochemistry, University of Notre Dame, USA visited on 1st and 2nd December 2008. He delivered a lecture on



"Nanostructure architectures for energy conversion".

Professor Christophe Coutanceau, University of Poitiers, France visited on 1st December 2008 and delivered a lecture on "Current research topics of catalysis in organic chemistry of University of Poitiers".

Professor Jun-ichi Yamaki, Professor H Sakaebe, Professor S.Okada, and Ms.Irina, Research Scholar, Institute for Materials Chemistry and Engineering, Kyushu University, Japan visited on 1st December 2008 for discussions on the DST-JST joint collaborative project on 'Development of high performing electrode materials for lithium ion batteries'.

## Foreign Deputation

Our Scientist Dr. S. Gopukumar was deputed to Korea to deliver a talk on Secondary Batteries (LIB, LPB) at the third Asian Conference on Electrochemical Power Sources held at the Korea



University, Seoul during November 10 14, 2008. His visit was sponsored by the Korea University.

He was also deputed to USA to deliver invited talk at the 4<sup>th</sup> Annual Conference on Lithium Mobile Power 2008 at Las Vegas during December 8 and 9, 2008 and to visit Illinois Institute of Technology, Chicago during December 10-12, 2008. His visit was sponsored by the CSIR, DST, Organizers of the Conference and Illinois Institute of Technology.

## Vigilance Awareness Week

As per the directives of Central Vigilance Office, Government of India, Vigilance Awareness Week was observed from 3rd to 7th November, 2008 at this Institute. The Vigilance Awareness Week began with administering the pledge in Hindi and English by Professor A. K. Shukla, Director, CECRI on 3.11.2008.

A lecture was delivered by Shri K. R. Sarma, Former Senior Deputy Secretary, CSIR on 5th November, 2008. He outlined the important points in CCS(Conduct)

Rules, 1964 and CCS(CCA) Rules, 1965, which was very well received by all staff.

The Valedictory function of the Vigilance Awareness Week was held on 7.11.2008. Dr. V. Yegnaraman, Scientist 'G' presided over the function. Shri K. Nandabalan, I.P.S., Inspector General of Police & Commissioner of Police, Madurai City was the Chief Guest of the function. Shri Nandabalan outlined the importance of Vigilance Awareness and the need to check the menace of corruption. Dr. A. Muthukrishnan, Controller of Administration proposed the vote of thanks.

A large number of posters and banners both in English and Hindi on the theme of fighting 'Corruption' were displayed in the Scientific and Administrative blocks and other focal points in the Institute for general awareness.



## CECRI Diamond Jubilee Lecture

Professor Goverdhan Mehta, <sup>FRS</sup>, CSIR Bhatnagar Fellow and Honorary Professor of Indian Institute of Science, Bangalore delivered the CECRI Diamond Jubilee Lecture on October 6, 2008 on "CHEMISTRY FOR A BETTER FUTURE AND INSPIRATIONS FROM THE PAST". The agenda of his talk included: Celebrations of Chemistry, Directions and challenges, reflections and inspirations, Indian scenario etc.

Professor Goverdhan Mehta quoted very popular quotations of Great Chemists during his lecture, explaining the transitions from alchemy to modern science. The evolving perception of chemistry commences from



Discovery, followed by understanding and creation of machines and molecules. By understanding molecular structure we can create (design) molecules. He narrated the ever expanding canopy of chemistry: Materials to medicines; Nanotechnology to sustainable energy; climate research to generic modifications and other unmatched interdisciplinary opportunities.

He pointed out chemistry as a utility science with powerful interface with industry with supporting figures that World Trade in Chemistry in 2004 was \$1500 billion and projected to be over \$4000 billion in 2008. Chemicals account for 15% of global trade in manufactured goods.

Professor Goverdhan Mehta highlighted the issues with following concerns.

Is there any identity crisis? Do we define ourselves too narrowly despite the vast expanse of the discipline?

Do we project well, the dynamic synergy between the perpetual quests for new structures with functions?

How to reposition chemistry with respect to other sciences? Do we need to cosmeticize our discipline to amplify its intellectual appeal?

He also suggested ways to promote the cause of chemistry as to

❖ Revisit the intellectual landscape – promote chemistry as a science for human well being and sustainable future.

❖ Harness the potential of the exceptional interface between chemistry and industry

❖ Sharpen the networking skills

❖ Chemistry – as a new bridge to span the increasing charm between science and society.

He traced the long tradition of India possessing in natural products and traditional medicines. Nutraceuticals and cosmeceuticals have \$60 billion herbal market. He concluded his talk by stating that

★ Chemistry continues to draw enough students at both graduate and undergraduate level.

★ Signs of incremental improvement in the quality of training and research is visible.

★ New institutions are being established with better infrastructure

★ Job opportunities are available with competitive compensation and emergence of a new breed of entrepreneurs.

Earlier Professor A.K.Shukla, Director welcomed Professor Goverdhan Mehta to CECRI and cherished his long association with him. Dr.V.Yegnaraman, Scientist 'G' proposed vote of thanks for his ready acceptance of CECRI's invitation to deliver a talk.

Contract research projects undertaken

Title	Organization	Value
Gold plating of minor components of RWA and MWA used in Satellites [IV set]	ISRO Inertial Systems Unit [IISU] Thiruvananthapuram	Rs.4,00,620/-
Corrosion studies of canister materials	DRDL, Hyderabad	Rs.3,00,000/-
Hydro fluoro ethers as third generation substitute for CFCs	Ministry of Environment and Forest, New Delhi	Rs.13,17,382/-

Consultancy projects undertaken

Title	Organization	Value
Supervision during the commissioning of CP system for the dock line, Chennai	IOC Limited, Chennai	Rs.4,00,000/-

Industry oriented technology courses

CECRI offers a variety of courses to scientific and technical personnel working in Private industries, Government Departments and Academic institutions. These courses are designed to impart the necessary knowledge and skills. Participants will be given ample opportunities to have hands on experience. The following courses were conducted:

S.No.	Name of the course	Duration	No. of participants	Fees collected Rs.
1.	Battery Science and Technology	3-8 NOV 08	5	60,000/-
2.	Lead Acid Battery Care and Maintenance	17-19 NOV 08	2	10,000/-
3.	Pipeline Corrosion and its Control	17 – 21 NOV 08	4	18,000/-

**Award**

Our Scientist Dr. S. Mohan has been awarded N M Sampat Award for 2008 by the Electrochemical Society of India, Bangalore.



**Retirement on Superannuation on 31.12.2008**



Mr. P. Adaikkalam, Scientist Gr. IV(5)