



IN TOUCH.....IN TUNE

CSIR-CMERI Monthly Newsletter
Extended Special Issue, June 2016

Visit of Dr. Harsh Vardhan, Hon'ble Union Minister for Science & Technology & Earth Sciences and Dr. Girish Sahni, Director General, CSIR

Dr. Harsh Vardhan, Hon'ble Minister for Science & Technology and Earth Sciences, Government of India and Vice President, CSIR along with Dr. Girish Sahni, Director General, CSIR and Secretary, DSIR visited CSIR-CMERI during May 16-17, 2016. On the occasion of the visit, a number of programmes and demonstrations were organized at CSIR-CMERI. Prior to the visit, a meeting was held with local entrepreneurs on the

Technology Incubation Centre CSIR-CMERI is proposing to establish. On Friday, May 16, 2016, an interactive meeting with the leaders of industries in and around Durgapur was organised. A live technology demonstration on Underwater Robotics took place on May 17, 2016. Moreover, an exhibition comprising demonstration of a number of technologies developed by CSIR-CMERI was organized on May 17. A meeting of the Hon'ble Minister and the DG, CSIR with the staff members of CSIR-CMERI, Durgapur was also organized.



A view of the gathering of industry captains on May 16, 2016



A local entrepreneur interacts with the Hon'ble Minister



Dr. Harsh Vardhan inaugurates the Control Container at the Shallow Basin Facility

advised the scientists to interact with the Ministry of Shipping, Government of India in that regard. The DG, CSIR asked the scientists to work on proving the ruggedness of the system, following which the technology should be demonstrated to the appropriate industries.

Thereafter, the Hon'ble Minister witnessed live demonstration of a number of technologies developed by CSIR-CMERI. He took keen interest in each and every demonstration, patiently heard the explanations made by the scientists and also enquired about the cost and market potential of the technologies developed. The Hon'ble Minister advised for organizing an exhibition in Kolkata with all societal products developed by CSIR-CMERI to capture the attention of media and industries.



The Autonomous Underwater Vehicle developed by CSIR-CMERI being demonstrated



Dr. Harsh Vardhan addressing industry captains on the evening of May 16, 2016

During the interactive meeting with the leaders of industries in and around Durgapur and senior scientists of CSIR-CMERI on the evening of May 16, 2016, the Hon'ble Minister expressed his desire for forging a close and durable relationship between Industries and CSIR laboratories with a view to provide solutions to the problems of the common people through simple but effective means. He requested the industries to come forward and acquire CSIR technologies since in his opinion the industries stand to reap immense benefits within a short span of time through acquisition and marketing of technologies developed by CSIR laboratories. The Hon'ble Minister asked the DG, CSIR and Director, CSIR-CMERI to interact regularly with industries to assess their needs and fast-track research activities to meet these needs.

On the morning of May 17, the Hon'ble Minister, along with the DG, CSIR and Director, CSIR-CMERI visited the Shallow Basin facility of the Institute, where the Hon'ble minister inaugurated the **Control Container** developed by CSIR-CMERI for lake and sea trials of Autonomous Underwater Vehicles. CSIR-CMERI scientists displayed the AUV to the Hon'ble Minister and also performed a live demonstration of a **lab-scale robotic surface craft for unmanned shallow water hydrographic survey**. The Scientists also conducted a bathymetric survey of the shallow basin using multi beam sonar. The Hon'ble Minister interacted with the scientists regarding possible applications and potential of the technology and

Paper of the Month

Anion-Directed Copper(II) Metalloclages, Coordination Chain, and Complex Double Salt: Structures, Magnetic Properties, EPR Spectra, and Density Functional Study

Jing-Yun Wu, Ming-Shiou Zhong,
Ming-Hsi Chiang,
Dibyendu Bhattacharya,
Yen-Wei Lee, Long-Li Lai

**Chemistry –
A European Journal,
2016, 22(21)
Pages 7238-7247**

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Dr. Harsh Vardhan interacts with scientists and innovators during the exhibition arranged on the occasion of his visit to CSIR-CMERI, Durgapur

The Hon'ble Minister praised the effort of CSIR-CMERI in developing a **Plastic waste to fuel oil conversion system**, which is expected to provide a solution to the social menace of plastic wastes. The Hon'ble Minister further lauded the efforts of CSIR-CMERI in providing technological support to North East India through integrated post-harvest processing system for agri-produce of North-East India and advised the scientists to develop a small but fully automated integrated system for deriving the final dried spice powder from the input raw material. DG, CSIR suggested that the technology be implemented in the state of Assam also.

The Hon'ble Minister enquired about the level of implementation of the **Improved Iron Removal Plant** technology in the concerned areas. In regard to the Fluoride Removal Kit developed by CSIR-CMERI, both the Hon'ble Minister and the DG, CSIR advised the concerned scientist to undertake further studies on the assessment of water quality after filtration as a new adsorbent has been employed for removal of fluoride from water. They also stressed on quick deployment of the technology at the ground level. The Hon'ble Minister further enquired about filtration of the arsenic detected by means of the **Arsenic Detection Kit** developed by CSIR-CMERI and stressed on the need of evolving an integrated system for arsenic detection, removal and disposal. In regard to the kit developed by CSIR-CMERI for **early detection of fluorosis in humans**, the Hon'ble Minister enquired about the status of commercialization of this technology since a similar technology has been developed some time back by CSIR-NEERI. The Hon'ble Minister was informed that the technology developed at CSIR-CMERI employs a different route using an alternative non-corrosive material, and that this new technology has brought down the cost of the kit substantially. Hon'ble Minister expressed his view that the cost benefit of the developed kit would be clear only after the new technology becomes available in the market.

Thereafter, the Hon'ble Minister was apprised about the life assessment studies being conducted by CSIR-CMERI for the power, steel and other industries. The institute possesses the accreditation of Central Boiler Board in this regard, it was informed. The Hon'ble Minister advised the scientists to keep in close touch with the concerned industries and to strive for enhanced earning. The DG, CSIR suggested a new business model, whereby the institute, instead of charging a fee for the services rendered, might ask for a fixed percentage of the profit earned by the customer industry.

The Hon'ble Minister, after witnessing the demonstration on **Low Cost Intelligent Wheel Chair**, stressed on keeping the product cost low in order to serve a larger section of society. He advised the scientists to go through the prototype of 'Motorized Wheelchair' developed under an international collaborative programme of DBT and USA government. The prototype was inaugurated at **Indian Spinal Injury Centre**, New Delhi which costs around Rs. 45,000/-.

Finally, the Hon'ble Minister inaugurated a **Solar Power Tree** developed by CSIR-CMERI to generate solar PV power with low foot print. He wished for the provision of two such 'power trees' for his office and official residence in New Delhi.



Dr. Harsh Vardhan at the Rheocasting Facility



Dr. Harsh Vardhan inaugurating the Solar Power Tree

The next phase of the programme took place in the Institute Auditorium, where the Hon'ble Minister and the Director General, CSIR met the entire body of the Institute. The programme began with inauguration of the new bilingual website of CSIR-CMERI by the Hon'ble Union Minister, which Dr. Harish Hirani, Director, CSIR-CMERI believed was a major instrument for building the public image of the Institute as well as a means for attracting new R&D businesses.



Dr. Girish Sahni addressing CSIR-CMERI family on May 17, 2016

Addressing a packed auditorium, Dr. Girish Sahni, Director General, CSIR commented on the importance of the occasion due to the august presence of Dr. Harsh Vardhan, who was present in person to provide guidance and mentorship for the advancement of science and technology. The will to work and deliver has always been the hallmark of CSIR; but when superior personalities – personalities who lead the society in terms of image, experience, strength, position and intellect step in to mentor us, that very action produces a new impetus for doing even better and delivering even more, Dr. Sahni said. After many decades – said Dr. Sahni – the country is being guided by a leadership which has placed before the scientists the extremely important challenge of identifying and prioritizing the problems and needs of the society so that solutions emerging from research and development can be offered for the succor of the

society. Galvanizing the Institute towards the attainment of this goal was the reason for the presence of Dr. Harsh Vardhan – said Dr. Sahni. The challenge before and the responsibility of CSIR as an organization is now to utilize this guidance and energy to devise ways and means to solve the problems of the society through R&D efforts. Considering what was witnessed on the day and the laudable history of the Institute Dr. Sahni was confident that CSIR-CMERI shall be able to carry forward its research activities with full vigour. What was needed, he said, was to complete the assignments with full focus and in a professional and time-bound manner. CSIR-CMERI should also benchmark its activities against the global position, he added. Dr. Sahni further added that there was a necessity of gathering knowledge about the market requisites, who the competitors were and what needs are being catered to through R&D. Unless these are

known, it would be difficult to come up with a viable business model, he thought. Dr. Sahni concluded his speech by conveying that it was indeed opportune for CSIR-CMERI that the Hon'ble Union Minister was present on the day to lead the way and to elevate CSIR-CMERI to an even higher position through his counsel – not only in the country, but also globally.



Dr. Harsh Vardhan speaks from his heart to CSIR-CMERI

Addressing the assembly, Dr. Harsh Vardhan, Union Minister for Science & Technology and Earth Sciences told that it was indeed an auspicious occasion for him since though after assuming the charge of the Ministry he had visited all the laboratories in Kolkata associated with the Ministry of Science &

Technology, he could not find the opportunity of visiting CSIR-CMERI, Durgapur. He, however, had the opportunity of dedicating to the nation the **krishiShakti Tractor** designed and developed by CSIR-CMERI for the less empowered farmers of the country on November 10, 2014. Kolkata in particular and the state of West Bengal in general has long been a source of inspiration to him, the Hon'ble Minister said. He expressed his deep regard for personalities like Swami Vivekananda, Ramakrishna Paramhansa, Rabindranath Tagore, Netaji Subhas Chandra Bose and Dr. Bidhan Chandra Roy. West Bengal has also been the cradle of research of eminent Indian scientists including Acharya Jagadish Chandra Bose, Satyendra Nath Basu and Prof. C.V. Raman, the Minister mentioned. The Hon'ble Minister said that in comparison to the doyens of Indian science the scientists of the current times were much better placed in terms of infrastructure and state-of-the-art equipment. There is therefore no reason, the Hon'ble Minister observed, why through a marginal reorientation of our philosophy, energy, mission passion and ideas science and technology can not be brought to the service and succor of the nation. We have the capacity of doing many things, and this we have proved to the world. But much more remains to be done, to be achieved. Even after 69 years of independence the majority of our population is denied of their basic needs and amenities. The Hon'ble Minister commented that as



Dr. Harsh Vardhan being felicitated

scientists all would agree that science and technology has the wherewithal of understanding and solving the problems of the teeming millions, of making their life a little better, a little more bearable and somewhat easier. And this, Dr. Harsh Vardhan stressed, is the need of the hour. Dr. Harsh Vardhan invited all to bring about a change in the way of thinking and to comprehend in depth the problems of the common man so that research addresses to those very problems and solutions are brought about through proper prioritization. CSIR-CMERI has the manpower, the knowledge and the experience of more than fifty years of research activity, the Hon'ble Minister observed. The Institute has the golden opportunity of contributing its mite by its efforts for problem mitigation of the problems of the common people through the different missions that are to be rolled out soon under the inspired leadership of the Prime Minister Mr. Narendra Modi. Dr. Harsh Vardhan recalled the visionary roles of Pandit Jawaharlal Nehru, Shri Atal Bihari Vajpayee, Dr. Shyama Prasad Mukherjee and Shri Narendra Modi in furthering science and technology for the progress of the nation and ended his speech by issuing the clarion call to CSIR-CMERI to increasingly strive to dedicate its capabilities and resources for the welfare of the nation and its people through a new oath of allegiance to the nation and its people.



Dr. Girish Sahni, DG, CSIR being felicitated



Constitution of Committees, Units & Groups

- A **Committee on Management** headed by Director, CSIR-CMERI was constituted to discuss various issues related to the smooth functioning of the Institute and discuss and evolve ways for further streamlining of Institute activities. [O.M. No.1.Adm(1)/Misc./Committee/97-E dated May 23, 2016]
- In a bid to improve upon the public, community and investor relations, and also to promote the Institutional image and generate awareness about Institute activities, a **Corporate Communication Unit** was constituted by Director, CSIR-CMERI. [O.M. No. Misc./Estt.I/2003 dated May 23, 2016]
- Considering the need to improve industry interface and obtain a first hand idea of the industry requirements a **Technology Marketing Group** was constituted by Director, CSIR-CMERI so that the industry can be appraised of products and technologies available with CSIR-CMERI, and the institutional R&D agenda can be suitably orientated. [O.M. No.1.Adm(1)/Misc./Committee/97-E dated May 23, 2016]
- A committee was constituted by Director, CSIR-CMERI to set up an **Incubation Centre** at the Institute. [O.M. No. Misc./Estt.I/2003 dated May 23, 2016]

Merger of Labs/Groups

- In view of the commonality of research activities being carried out in the respective groups, the **Design of Mechanical System Group** and the **Surface Robotics Group** was merged to constitute the **Surface & Field Robotics Group**. [O.M. No. Misc./Estt.I/2003 dated May 9, 2016]
- Based on the recommendation of the respective Heads, the **Condition Monitoring Group** and the **Mechanics & Stress Analysis Group** was merged to form a new group entitled **Condition Monitoring & Structural Analysis Group**. [O.M. No. Misc./Estt.I/2003 dated May 23, 2016]
- Based on the recommendation of the respective Heads, the **Advanced Design & Optimization Group** and the **Aerosystems Laboratory** was merged to form a new group entitled **Engineering Design Group**. [O.M. No. Misc./Estt.I/2003 dated May 23, 2016]

Charge Takeover

- In view of the impending retirement on superannuation of Cdr. V.R. Dahake, Chief Scientist & Scientist-in-Charge, CSIR-CMERI-CoEFM, Ludhiana with effect from July 31, 2016, the Director, CSIR-CMERI, Durgpur has been pleased to decide that Mr. Ashis Kumar Choedhury, Chief Scientist will take over as the Scientist-in-Charge, CSIR-CMERI-CoEFM, Ludhiana from August 1, 2016. [O.M. No. 10.Adm.(18)/78-E(B) dated May 9, 2016]

Miscellaneous

- In order to improve upon the public impression and media image of the Institute, the Director, CSIR-CMERI has decided that all communication with media on any issue shall be made exclusively by the Director, CSIR-CMERI, Durgapur or by the newly constituted Corporate Communication Unit after due discussion with the Director, CSIR-CMERI. [O.M. No. Misc./Estt.I/2003 dated May 30, 2016]
- The Director, CSIR-CMERI has decided that from June 2016 onward, all matters related to filing of patents should finally be routed through Dr. S.N. Maity, Chief Scientist & Head, Technology Innovation Centre. [O.M. No. Misc./Estt.I/2003 dated May 27, 2016]
- Dr. Ranjan Sen, Chief Scientist & Head Precision Engineering & Metrology, delivered a technical lecture on *Estimation and application of measurement uncertainty in testing and calibration* in the Seminar on **Uncertainty in Measurement** at Kolkata on May 26, 2016. The seminar was organized by Indian Chamber of Commerce in which other renowned dignitaries like Dr. V.N. Ojha, Chief Scientist of NPL; Mr. Abhijit Das, Technical Operation Manager, NABL-New Delhi, Dr. Prasun Das, Head, SQC & OR unit, ISI-Kolkata, Mr. C.K.Biswas, CEO,NBQP, Quality Council of India, also spoke. The seminar was attended by thirty participants from various industries including the Berger Paints, Hindalco, MSK Testing & Inspection, Omega Consultant Services, etc. Dr Sen covered the sub-themes like importance of Quality Standard ISO/IEC175025 and Mutual Recognition Arrangements, uncertainty evaluation methodology in measurements in the fields of mechanical calibration & testing, electro-technical calibration and thermal calibration. The event afforded an excellent forum for publicizing CSIR-CMERI's total scope of NABL Accreditation, which might serve to attract more industries and agencies for utilizing the calibration and inspection services offered by the Institute.