

CENTRAL MANAGEMENT ACTIVITIES

2.0 PREAMBLE

CSIR under its umbrella has a network of 38 laboratories and 39 field/extension centers, which are multi-disciplinary and multi-locational, manned by around 18000 committed staff. The R&D activities and affairs of CSIR are managed by the Director General with the assistance of a multifunctional and multi divisional CSIR Hqrs. under the guidance and direction of the Governing Body (GB) and the Advisory Board (AB). The policy directions are outlined by CSIR Society, which has Hon'ble Prime Minister as the President and Minister for Science & Technology & Ocean Development as Vice President. The Central Management Activities during the year are outlined as under:

2.1 CSIR SOCIETY

A meeting of the CSIR Society, presided over by the Prime Minister, was held on 25.05.05 at 7, Race Course Road, New Delhi. The following items were adopted by the Society:

- Confirmation of the Proceedings of the Meeting of CSIR Society held on 26 July, 2004,
- Consideration and adoption of the Annual Accounts of CSIR for the year 2003-2004; the audit report and CSIR's comments thereon,
- Adoption of CSIR Annual Report 2003-2004, and
- Amendment of rules 59 & 60 of CSIR By-Laws.

Hon'ble Minister Shri Kapil Sibal thanked the Hon'ble Prime Minister for the strong support that he has provided not only to CSIR but to the entire scientific fraternity. He said "*as the Vice-President of CSIR, it gives me immense pleasure to say that we had a great year*".

CSIR had recorded the highest number of basic research papers in peer reviewed science journals, the highest number of foreign patents as well as the highest earning last year, Shri Sibal informed the Society.

He also informed the launch of Sofcomp, a computer for the common man, with a price less than Rs. 10,000 a scientific breakthrough from CSIR reported in the prestigious journal 'Science' about tracking of the migration of population using modern molecular biological tools (by CCMB), TB molecule that will help the poor in India, an affordable medicine to treat psoriasis,

producing bacteria and virus free water by using unique polymeric membrane processes and the flight of the SARAS aircraft.

Shri Sibal further, said that CSIR has a huge potential, yet to be explored. He assured Hon'ble Prime Minister that CSIR will deliver to its full potential and that too in tune with the new exciting national agenda that he has set up. He said "*we want Bharat Nirman to be a reality*".

Dr. Mashelkar presented the overall achievements of CSIR during the year. He mentioned about upward growth in terms of the quality of science with the number of research papers published increasing to 2668 in peer reviewed journals (both national and international) at an Average Impact Factor per paper of 1.9 this year which is comparable to the figure of 2.2 of IISc. The scientific achievements included technology transfers of A-Acrylamido 2-Methyl-Propane Sulfuric (AMPS) to M/s Vinati Organics and THPE to M/s Excel Industries; chemical free (enzyme only) bioprocessing in Leather; low priced mobile desktop PCs (Rs. 10,000); new anti-leukemic compound isolated from Betel plant (Piper Betel) etc.

Hon'ble Prime Minister and President, CSIR Society complimented CSIR for the good work carried out during the year. He commended the active role being played by CSIR community in the field of providing pure drinking water particularly the breakthrough in ultra filtration technology where membrane can filter the virus along with other bacteria. He cited this as an excellent example of socially relevant research. He appreciated that several other technologies are available from CSIR labs that can ameliorate not only the drinking water problem but several other problems faced by our people on a daily basis. He emphasized upon an urgent need to focus our attention on robust delivery mechanism and wider dissemination of technologies. He invited CSIR to lend a hand through its technological prowess in the areas of irrigation, power, roads, drinking water, housing and communications under a massive 'Bharat Nirman' scheme with a total outlay of Rs. 1,74,000 crore to provide technological support for basic human needs of the people living in rural India. He reiterated the need to address the challenges at the apex of the knowledge pyramid and announced the formation of a National Science and Engineering Research Foundation- an autonomous body- to support basic science.

He dwelt upon the specific issue of protection of knowledge and mentioned about the new IPR regime in the wake of passing of the Third Patent (Amendment) Bill. He stated that CSIR has always been at the forefront in understanding the importance of generation, valuation, protection and valorisation of intellectual property. He quoted "*I am happy to see the CSIR's*

initiative to launch a formal Intellectual Property Management Policy as early as 1996 has richly paid dividends”.

Recognizing the superb human capital that have been built in science, engineering and technology, he gave the responsibility to CSIR to flag not only country’s prowess in high technology but also ability to make high technology work for the poor during South Summit meeting to be held in Doha in June 2005.

He concluded his speech by saying *“Our Science & Technology should continue to fly the Indian flag, higher and further. I will like to wish the entire CSIR family all the very best on its journey on this limitless ladder of excellence”.* [The full text of the speech is at Annexure-VII]

2.2 GOVERNING BODY (GB)

The Governing Body of CSIR met twice during the year, i.e. on 13th September 2005 and 16th February 2006. The GB in its meetings deliberated on several crucial subjects and gave directions on these issues:

- On 13th September 2005 in its 165th meeting, the GB approved: CSIR – Advanced Institute of Science Training (AIST)- a deemed university; scheme for setting up Knowledge Alliance between CSIR constituent labs and private industry; recruitment rules for the post of Director; CSIR-technology Awards-2005; donating desalination plants to *tsunami* affected areas of India; modification of investment procedure of temporary surplus funds of Govt. grants in CSIR Hqs.; proposal for construction of polymer science & engineering lab building at NCL; construction of wind turbine lab at NAL; consideration and adoption of CSIR Annual report 2004-05.
- On 16th February 2006 in its 166th meeting, GB approved: setting up incubation centres in CSIR laboratories; mobility of scientists between industry and CSIR; acquisition/ in-licensing of early stage IP knowledge and sourcing of expertise from abroad to NMITLI projects; National facility for advanced Proteomic & Protein research for development of drugs and therapeutic proteins; extension of time of the proposal on consolidation of core competencies of CMRI & CFRI; proposal for upgradation of additional posts of Director in the pay scale of Rs. 22400-24500; CSIR award for S&T innovations for Rural development; award of 2005 Shanti Swarup Bhatnagar Prizes and CSIR young scientist awards.

2.3 DEPARTMENT RELATED PARLIAMENTARY COMMITTEE

The Department Related Parliamentary Committee on Science & Technology, Environment and Forests examines and recommends the demands of grants of the DSIR including CSIR. It also takes up specific topics/ subjects of

national S&T interest for deliberation from time to time. The Committee considered the Demand of grants for the year 2005-06. A background note was prepared highlighting activities, programmes and financial summary. The Committee has made certain observations/ suggestions. Significant ones are:

- appreciates that the CSIR is striving towards undertaking a wide gamut of research and developmental activities in the area of high technology, which would help in projecting India as a forerunner amongst scientifically advanced nations. The Committee, however, feels that emphasis of CSIR should be dissemination of new technologies from the laboratories for the benefit of the common man.
- commends the efforts of the Department to keep pace with the new technologies and to project the country as a technologically developed nation. The Committee feels that keeping in view the fact that the CSIR infrastructure was built or acquired more than thirty years ago, building of new infrastructure and renovation of the existing ones are of utmost importance and should be taken up in right earnest.
- commends the CSIR for achieving number one position in securing Patents in India and abroad and hopes that the CSIR would strive towards safeguarding the country's interests, specially keeping in view the efforts made by foreign organizations to encroach upon our traditional base.
- that a special cell may be set up to coordinate and pool the knowledge gained in the CSIR laboratories and the private sector companies and disseminate it through direct interactions with the industry or through the print and electronic media. Efforts may also be made to ensure that there is no duplication in the research work carried out in the CSIR laboratories and the private sector companies so that country's scarce resource is not wasted.
- that India needs the most advanced infrastructure and laboratories for carrying out cutting edge research in various fields. The infrastructure should be seen as a strategic national resource and funding should be given on a long-term basis so that the modernization becomes a continued process for effectiveness and improvement in our scientific growth. The Committee is also of the view that the laboratories at the graduate/post-graduate level should be upgraded so that interest can be generated among the young students for further research.

2.4 CSIR FOUNDATION DAY

TWENTY-SIXTH September is a very important day for the entire Council of Scientific & Industrial Research (CSIR); it was on this day in 1942 that CSIR

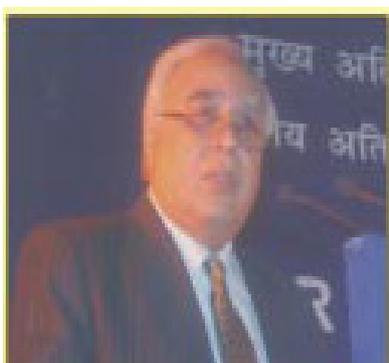
was established. The day is celebrated by the entire CSIR family of 38 labs with great pomp and gaiety. It is a day for introspection — to take stock of the past year's progress, and plan for the future. It is also a day for recognizing excellence through various awards.

The CSIR Foundation Day main function this year was held at the Hotel Ashok, New Delhi. It was attended by a host of dignitaries from different walks of life in addition to members of the CSIR family. It was an affirmation of CSIR's belief in progress through partnerships at all levels — local, national and global. Shri Somnath Chatterjee, Speaker, Lok Sabha, was the Chief Guest. Shri Kapil Sibal, Minister of Science & Technology and Ocean Development and Vice President, CSIR, presided over the function.



From R to L: Shri Kapil Sibal, Shri Somnath Chaterjee and Dr. R.A. Mashelkar

Dr Swati Piramal, Director, Strategic Alliances & Communications, Nicholas Piramal India Limited, delivered the CSIR Foundation Day Lecture, titled 'Kurukshetra, Science and Transformation: Two forces that reshape the world'. Dr R. A. Mashelkar, Director General, CSIR, extended a warm welcome to the distinguished invitees and guests.



Hon'ble Minister of S&T and OD during Foundation Day celebrations

The prestigious CSIR Young Scientist Awards and CSIR Technology Awards were presented, and names of winners of the CSIR Diamond Jubilee Invention Awards for School Children for 2005 were announced. A book on Materials Science by Dr. Lakshmi Kumar, National Physical Laboratory (NPL), New Delhi, was also released on the occasion.

Address by Shri Somnath Chatterjee, Hon'ble Speaker, Lok Sabha

“Shri Kapil Sibal, Honourable Minister of State for Science & Technology and Ocean Development; Dr R.A. Mashelkar, Director- General, Council of Scientific and Industrial Research (CSIR); Members of the CSIR Family; Distinguished Scientists; and Ladies and Gentlemen: It is a matter of privilege and an honour for me to be here with you and to associate with the Foundation Day Celebrations of the Council of Scientific and Industrial Research (CSIR). Let me extend my best wishes to the entire CSIR fraternity on this happy and auspicious occasion. There is great appreciation in the country of the positive and pro-people work being done by the CSIR over the decades. In a developing country like ours, the scientific community has a very important role to play. Indeed the multifarious initiatives that the CSIR has taken to see that the fruits of science and technology are available for the benefit of the average Indian have been impressive. CSIR is known to be using advancements in science and technology to meet the basic human needs relating to food, health, water, energy, employment and shelter, amongst others. It has made commendable achievements in several fields, starting from agriculture to space research, and made a mark as an organization driven by pursuit of excellence and an urge to contribute to the process of nation-building. We must realise that our multifarious socio-economic problems can be effectively addressed only through scientific, technological and industrial progress. We all aspire for the transformation of India on modern scientific lines, extending the benefits of education and health-care to all. Pt. Jawaharlal Nehru always laid great emphasis on developing a scientific temper among Indians and underscored the importance of science and technology in the task of nation building and in establishing an egalitarian and rational society. Our scientists are exploring the heights of space and the depths of the oceans. India is now one of the leading nations in developing and using space technology for the benefit of humanity. Our Ocean scientists have been making enormous strides in harnessing gas hydrates, a vast energy resource in the ocean bed. The results of our R&D in the medical and pharmaceuticals fields are also attracting global attention. Indian companies are providing low-cost drugs to fight HIV/ AIDS in Africa. CSIR's successes in developing affordable drugs for the poor and for the treatment of tropical diseases such as Malaria, are particularly commendable. We are matching global standards of excellence in the frontier area of biotechnology. The spirit of innovation and excellence is now spreading to many new areas. Undoubtedly, India's most remarkable

success in recent years has been in the field of Information Technology. The success lies not only in the steadily rising software exports but also in the growing opportunities in outsourcing of services. Every area of India's socio-economic development today bears the signature of Indian science."



Hon'ble Speaker of the Lok Sabha, Shri Somnath Chatterjee addressing the gathering

2.5 SHANTI SWARUP BHATNAGAR PRIZE PRESENTATION CEREMONY

The prestigious Shanti Swarup Bhatnagar Awards function was held on 28th September, 2005 at Vigyan Bhawan, New Delhi presided over by Honourable Prime Minister of India, Dr. Manmohan Singh who gave away the prizes to the winners of the awards for the years 2004 and 2005 and also addressed the gathering.

Excerpt of Speech by Shri Kapil Sibal, Hon'ble Minister for Science & Technology and Ocean Development [Full text of the speech is at Annexure VIII]

The Hon'ble Minister welcomed Hon'ble Prime Minister of India, Dr. Manmohan Singh and applauded his (PM's) support to the scientific community. He termed these celebrations to honour our achievers as triumph of science and quoted Nobel laureate and eminent English chemist, Sir Cyril Herman Hinshelwood who once said "Science is an imaginative adventure of the mind seeking truth in a word of mystery". It is these adventures in which all of us join these achievers.

He congratulated the Shanti Swarup Bhatnagar prize awardees and termed the prize as India's Nobel Prize. He also congratulated the winners of CSIR Diamond Jubilee Technology Award and winners of Diamond Jubilee Invention Award for school children. He stated the purpose of the award was to create awareness and arouse interest of school student in Intellectual Property.

He commended the work done by M/s Media Communication Technologies to connect the unconnected, which had fetched them the CSIR Diamond Jubilee technology award. He stressed upon the need to support indigenous technology at the earliest.

He expressed his happiness to see the Bhatnagar awardees in the function. He pointed out that meritocracy was not only necessary but essential. He mentioned the institution of Ramanujam Fellowships with an objective to bring the very best back to the country. Hon'ble Minister appreciated the release of India Science Report, of the Indian National Science Academy as it reveals the true state of science and technology in the country. Shri Sibal felt that it will not only quell many myths that are spread about Indian S&T, but at the same time shall also provide an occasion to think and analyse as to what needs to be done either by executive actions or remedial policy measures.



Shri Kapil Sibal delivering his address at Bhatnagar prize presentation ceremony

He mentioned about the events of significance that have happened during the year, viz. initiation of much higher levels of funding to basic scientific research, institution of fellowships to attract best talents from India and abroad, initiation of a process for creation of new institutes of science, education and research, evolving new policies and strategies for bio-technology, creating new public-private partnerships, facilitating `hassle-free' regulatory processes that could place Indian S&T on the world map, and enhanced funding in frontier areas, such as nano-technology. He was confident that with the unstinted patronage of Hon'ble Prime Minister of India support for new initiatives and safeguards for S&T infrastructure would always be available. He concluded by assuring that cause of science would always serve India well as long as the scientific community continues to get the support of extraordinary leaders of India like Hon'ble Prime Minister of India.

Excerpt of Speech of Hon'ble Prime Minister, Dr. Manmohan Singh [Full text of the speech is at Annexure IX]

The excerpts of his speech are provided in the following paragraphs:

Hon'ble Prime Minister expressed his delight to be in the company of scientists, creators of a new India, - an India free from shackles of ignorance, and felt very happy to recognize the role played by scientists & technologists

in Nation building and to honour the very best of Indian Science & Technology.

He complimented CSIR for the good work being done under the leadership of Dr. Mashelkar whose election as fellow of U.S. National Academy of Sciences was indeed a matter of pride. He applauded the Bhatnagar laureates and asked them to be ready to own many responsibilities such as to work for good science, to serve the best interests of mankind and of our natural inheritance. According to him the Bhatnagar Laureates had a role and responsibility to improve the quality of life and widen the span of knowledge in India. He was hopeful that each laureate would dedicate his/her life to the cause of science, to the welfare of country's people and to the development of the country.



Hon'ble Prime Minister Dr. Manmohan Singh addressing the gathering

He also congratulated the team of M/s Media communication Technologies on winning the CSIR Diamond Jubilee Technology Award. He applauded the technology which could reach the unreached and connect the unconnected and the role of leadership among developing countries. He hoped that the Technology Award would inspire others to develop similarly useful and potentially winning technologies.

He felt happiness in releasing the 'India Science Report' –published by Indian National Science Academy and based on an excellent survey taken up by National Council of Applied Economic Research. According to him, while the proportion of enrolled students in science going up from 28.0% in 1995-96 to 34.6% in 2003-04 is comforting, the fact that 20% of science graduates and 14% of Ph.Ds in science could not get gainful employment is a matter of concern. Further, the regional imbalance in terms of educational institutions in different states was also worrisome. He assured that the government would evolve policies to remedy these imbalances.



Bhatnagar Prize-winners (2004) with Dr. Manmohan Singh, Shri Kapil Sibal and Dr. R.A. Mashelkar

He reaffirmed India's commitment to basic science, applied science and promotion of excellence and rebuilding the science base in universities. He, further recalled Government's determination to de-bureaucratise S&T institutions and to restructure S&T support systems.

He expressed his concern over the existence of only one Indian Institute of Science for the whole country. To address that problem, he announced the creation of two institutes dealing exclusively with science education and research. He assured that within next 5-6 years the number of Ph.Ds in India would be doubled.



Bhatnagar Prize-winners (2005) with Dr. Manmohan Singh, Shri Kapil Sibal and Dr. R.A. Mashelkar

He also announced the approval of National Science & Research Foundation, an autonomous organisation, with funding of Rs. 150 crore per year. He felt pleased to announce the institution of Ramanujam Fellowship, J.C. Bose Fellowship and Fellowships for Scientists & Technologists of Indian Origin (STIO) to create exciting career opportunities for scientists to retain talent.

Hon'ble Prime Minister emphasized the importance of the knowledge and announced the formation of a Knowledge Commission. He also asserted that 21st century would belong to 'brain power' rather than to the military or economic power.

Dr. Singh set for the S&T community challenges of generating high technology, creating wealth & prestige for India and an assurance to improve

the lives of the poor. He complimented CSIR Society for some major breakthroughs such as high-tech membrane filter which could remove bacteria as well as viruses from water and provide drinking water at just 4 paisa per liter when fitted with hand-pump.

In his concluding remarks he desired the benefits of science to reach each & every corner of the country. He also stressed upon the need of improvement in the quality of text-books and teaching at school level and to make science an exciting discipline and an attractive career. He wished a great success in noble endeavours of CSIR as a whole.