

वैज्ञानिक एवं प्रशासनिक सहायक सेवाएं



Scientific and Administrative Support Services

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Quality Management System

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Planning, Monitoring and Evaluation Group (PME)

Contract R & D Projects, as Sponsored, Collaborative and Grant-in-Aid Projects are undertaken by the Laboratory with funding from External Agencies. Before submission of the project proposals to the outside agencies they are evaluated by the Group based on various criteria and conditions. Monitoring and developing of complete database for report generation on projects are done and project files are created and maintained. Similarly Major Laboratory Projects and other In-house Projects funded by CSIR & NPL, undertaken in NPL, are also monitored. Fund allocation and processing of indents is an important activity undertaken by this group. The report on completed projects and refund of unspent balance to the funding agencies at the end of project are made by the group.

PME prepares Annual Plan and Five Year Plan for NPL. It organizes Research Council meetings and coordinates the Management Council meetings, organized by administration. Time to time PME disseminates information on projects, performance reports and ECF reports to CSIR. PME is also involved in monitoring of Networking Projects. PME developed manpower data and maintains staff positions and disseminates the information to

various authorities. The group also maintains and regulates the appointments of project staff under various externally funded projects.

PME has the additional responsibility of getting feedback on degree of customer satisfaction in a prescribed format from funding agencies who are funding the different contract research projects in NPL. The process is done at the end of each project. This function has been initiated by CSIR under the supervision of Customer Satisfaction Evaluation Unit (CSEU) at CSIR Headquarter, Rafi Marg, New Delhi – 110 001. The feed-back received from the funding agencies are sent to CSEU, CSIR.

PME prepares many types of reports on Manpower in different formats as required from time-to-time and also does different type of Analysis for manpower planning of the laboratory.

Publication of Annual Report is another important activity of PME. On receiving inputs from various Divisions & other concerned groups, Text and Appendices of Annual Report are compiled, corrected and published in the form of Annual Report each year.

Industrial Liaison Group (ILG)

The Industrial Liaison Group (ILG) is responsible for the commercialization of research





and knowledge developed by the NPL scientists and researchers. Our focus is to foster and develop collaborative work environments between researchers, industry partners and funding agencies. We want to ensure that the relationships created through the commercialization of a technology continue to add value for all partners; leading to ongoing research projects for the inventor and the industry partner and to the commercialization of complementary technologies.

In addition, this group also undertakes consultancy, technical services and dissemination of science and knowledge base. This group is responsible for all matters connected with business development. It also helps in organizing "Technology" Day and "World Metrology Day" function where all licensees are invited to interact and deliberate with concerned PI of the technology. It also helps in organizing "Open Day" function, wherein few thousand school and college students with their teachers are invited to see the various scientific and technical activities at NPL. This group further carries out the dissemination of science through publication in CSIR news and in CSIR annual report, business and industrial magazines and their websites and through advertisements in news papers, conferences, symposiums, various other events and their souvenirs and also through participation

in exhibitions. Processing of applications for the awards pertaining to technology or consultancy services is rendered. This group also undertakes distribution of royalty, premia and intellectual fee pertaining to consultancy, technical services and technology know transferred. It further updates industries, licensees and scientists for any CSIR/DST entrepreneurship/funding schemes for applying for awards/projects. It updates scientists about scientific and technical exhibition, events. It acts as bridge in resolving scientific and technical issues raised by industries/clients for providing them solution through technical and consultancy services. This group also takes care in the management of S & T outputs with other funding agencies viz. DST, CSIR, NRDC, AIMA, CDC, FICCI, etc. This group interacts with FICCI and loads technology inventions at their website for wider exposure, collaborative work, market search and entrepreneurship demand. During the year, the ECG-PC based plug-in device received best technology award among technologies screened by CSIR. The USB based PC plugin ECG monitoring device which provides high quality ECG records is extremely cost effective. The group disseminated Knowledgegebase / Technology during India-Africa Exhibition held in Vigyan Bhawan Taj Palace and at 99th Indian Science held

during January 3 -7 2012 at Bhubaneswar. It Extended support to M/s Imax Media Pvt Ltd, New Delhi and Vigyan Prasar, who made documentary film on footage of Dr. K S Krishnan. This film was well appreciated by jury.

This group has initiated its efforts in setting-up an Incubation Center and possible knowledge alliance with Sensor Technology Pvt. Ltd., Moser Baer Photovoltaic Limited, Prabhatam Radisafe Limited, New Delhi, Reinste Nano Ventures Pvt. Ltd, Noida, Jyoti Cero Composite, Jamshedpur, ONGC energy center, Dehradun, GTC Technologies, Houston USA in the area of carbon composite, energy, sensor electronics, solar energy biological instrumentation water purification, EMI shielding, radiation safety etc. A certificate for setting-up of NPL Technology Innovation Center (NTIC) under Sec-25 company act will be issued during early 2012-13 as informed by registrar of Companies during 2011-12.

Human Resource Development Group (HRDG)

The Human Resource Development (HRD) Group of NPL is a constituent group of SASD 8 and represents a central group of the laboratory providing a wide range of HRD services. It undertakes several activities in various areas of core competence of the lab and also related to the research scholars.



The group is involved in various activities, such as, Organisation of Industrial Training in Metrology/ Standards, Placement and support to Research Scholars, Training for M.Tech./MCA/M.Sc. students from all over the country, Institutional Visits, Deputation of NPL staff members to attend conferences, etc. The basic object behind these activities is to make the Human Resource better informed, knowledgeable and highly skilled & trained so that it can prove to be more competitive, productive and useful to the society and the country.

International Science and Technology Affairs Group (ISTAG)

International Scientific Collaborations is rising to enhance the quality of research. ISTAG group facilitates the visits of scientific and technical personal of the laboratory. It advises the scientists to participate in International Conferences, seminars and summer schools. It helps the scientists to get prestigious international fellowships. This group also advises the scientists to avail bilateral exchange programme. It also organizes the visit of foreign delegations at NPL. International experts are invited to give talks and lectures at NPL. The scientific staff is motivated to avail sabbatical leave/study leave. Arranging training programmes for international candidates

is also the job of this group. International collaborative projects, bilateral exchange programme and MoU are also handled by this group.

Knowledge Resource Centre (KRC)

NPL Knowledge Resource Center (KRC) has been providing library and information support to scientists for R & D pursuits.

Over the years, it has developed a rich collection of scholarly books and journals for the purpose, especially in the field of physics and related sciences.

During the current year, KRC subscribed to 93 scholarly journals (72 foreign journals and 21 Indian journals) and added 561 books, out of which 286 were S&T books, 275 were Hindi books. KRC serves the NPL community with services like Reprographic service, Electronic Document Delivery service, Inter Library Loan service, Reference service, Literature Search service etc.

NPL-KRC offers online access to more than 6000+ full text journals under the e-consortium project of NKRC (CSIR+DST). The project facilitates access to electronic content from various publishers such as Elsevier, Springer, AIP (American Institute of Physics), APS (American Physical Society), AGU (American Geophysical Union), Wiley - Blackwell, Oxford University Press, Royal Society of Chemistry, American

Chemical Society etc as well as the archives of few publishers on concession rates.

KRC is also providing access to intranet edition of Indian Standards.

The shift in technology achieved with the installation of improved routers helped in attracting the R & D personnel in large number to make use of NPL-KRC and leads to optimize the use of the subscribed/ entitled e-resource as well as internet resources.

On continuous basis, KRC maintains its site on the NPL intranet to provide latest information on its activities such as additions to its collection, current subscribed journals, new journals received during the week, links to electronic libraries, publishing houses, and papers published by NPL researchers.

NPL-KRC also maintains NPL website (<http://www.nplindia.org>) on Internet to inform others about the activities of NPL such as its role towards the society, thrust area of research, facilities, services and achievements.

Further, to improve the quality, speed and effectiveness of services, KRC has completed the second phase of the automation task i.e. retro-conversion of books. With this, end users of KRC would avail the value added services associated with the NPL-KRC Information System (NKIS).

In the direction of providing





free worldwide access to the intellectual outputs of NPL in form of journals articles, research papers, conference papers, technical reports, preprints, and other scholarly communication and also to support the concept of open access initiative, NPL-KRC has established its Institutional Repository (IR@NPL) <http://npl.csircentral.net/>

NPL-KRC has moved its steps towards digitization in order to preserve the valuable information available in the print format. For the same MoU between NPL and Indian Institute of Information Technology (IIIT) Allahabad has been signed as a formality to enter into a UDL (Universal Digital Library) Project, a strictly non-commercial project, funded by Ministry of Communication and Information Technology, Govt. of India, New Delhi. Till date, more than two lakhs pages have been digitized under this project.

Central Workshop & Glass Technology Unit

Central Workshop has successfully completed 863 jobs related to R & D and maintenance work costing approximately Rs. 1.9819 crore (Rs. One crore ninety eight lac nineteen thousands) only. The jobs included designing, drawing, fabrication and development of various components required by the several scientists for their activities. Most of them are highly sophisticated components related to various R & D works.

In the Glass Technology Unit, we completed 120 jobs of different sections in N.P.L. It included the sealing of quartz ampoules, making of reactors B-45, Bubbler B24, distillation plant, condenser, covering of filaments in quartz tubes and electro chemical cells.

Due to good preventive maintenance, most of the machines in work shop are in good working condition.

Computation & Network Facility (CNF)

IT Infrastructure

The CNF strives to continuously upgrade the IT infrastructure at NPL, to keep up with ever increasing demand for IT facilities, and at the same time ensure reliable and secure operations. The NPL Data Centre houses various servers and security devices with redundant internet connectivity which are continuously monitored and dynamically reconfigured for maintaining efficient and secure services. Currently, the servers performing critical operations include Mail, Web, DHCP, DNS, Intranet, Anti-virus, Computation, Database, and Backup. The security devices include antivirus solutions and a Unified Threat Management system (UTM) consisting of a multi-level firewall and anti-spam solutions.

A Gigabit fiber optics based backbone now connects all buildings on campus providing

LAN connectivity to approximately a thousand computers. A new leased line connectivity with NKN (National Knowledge Network) has been established raising the internet bandwidth from 12Mbps to 1Gbps. Apart from this, CNF continues to provide IT hardware and software support to end-users.

A 128-core computational cluster has been established, which provides high performance computing facility to NPL research community. An enterprise level hardware facility like Storage Area Network (SAN) is being setup.

Inhouse Software Development

The CNF has been developing automated processes using open source technologies to create conducive and transparent environment for day to day tasks for both researchers and administration.

A web based Instrument Booking System (e-IBS) has been developed and deployed to efficiently manage various sophisticated and analytical instruments at NPL. The features include calendar availability and online reservation of the instruments, automatic email notifications and management of instruments. Access to various functionalities of the system is as according to defined roles.

A web based application system for Gp (IV) recruitment, developed earlier has been



enhanced to include automatic generation of synopsis sheet for screening of candidates, to speed up the recruitment cycle.

Currently, the process for deputation of NPL staff members to attend conferences/similar events is being automated.

Automation of Library processes has been completed. This facility is now online for the end-users.

R&D activities:

Under the DST sponsored project entitled "Innovative Product Development Centre", the Linux based software for operating the compact, low cost, PC-plugin 12-lead ECG device has been ported to the Windows platform. The Windows based software has enhanced features and has been packaged in the form of a product.

An ultra low cost brain oximeter, which measures the oxygen content of the blood flowing in the brain non-invasively has been developed and successfully tested in the laboratory.

Quality Management System

- To establish the international acceptability of the calibration & measurement capabilities of NPL worldwide;
- To give users reliable quantitative information on the comparability of national metrology services;
- To provide the technical basis for wider agreements negotiated for international trade, commerce and regulatory affairs.

This group maintains Quality System in NPL, based on the international standard IS/ISO/IEC 17025:2005, in the area of Test and Calibration. All the test/calibration areas of NPL are periodically audited to confirm the continued compliance to the international standard.

Due to reorganization of different Groups of NPL, the Quality Manual was revised last year. Accordingly, the different activities were guided to revise their document manuals.

The QMS group coordinated the Peer reviews of four activities

namely, Acoustic, Vibration & Ultrasonics, Ozone standards, Magnetic Standards and Inorganics solutions under Chemical Metrology. Out of these, three peer reviews was done for first time. This group helped all these activities to implement the quality system and for preparation of the peer review.

A delegation from NPL participated in APMP General Assembly and related meetings held in Japan. Laboratory Report of NPL was prepared and submitted to APMP in its General Body meeting. The QMS annual report was also submitted in APMP QS TC meeting.

A special training course on "Quality Management System – Laboratory Management, Need for Calibration / Accreditation as per IS/ISO/IEC-17025" was conducted during January 30 – February 01, 2012 for the staff of Department of Legal Metrology. About 30 participants from different states attended the course.

Team Members:

Dr. R. K. Garg, Quality Manager
Mr. A. K. Saxena, Dy. Quality Manager

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