DRDO NEWSLETTER

A Monthly Bulletin of Defence Research and Development Organisation

https://www.drdo.gov.in/newsletter ISSN: 0971-4391 JUNE 2025 | VOLUME 45 | ISSUE 06

A CELEBRATION OF SCIENTIFIC EXCELLENCE: DRDO OBSERVES NATIONAL TECHNOLOGY DAY 2025

Scan QR Code to access e-version of *DRDO Newsletter*

Editor-in-Chief: Kiran Chauhan
Associate Editor-in-Chief: Sudhanshu Bhushan
Editor: Dipti Arora
Design & Pre-press: Raj Kumar
Printing: Rajesh Kr Singh
Distribution: Pratyaksh Sharma

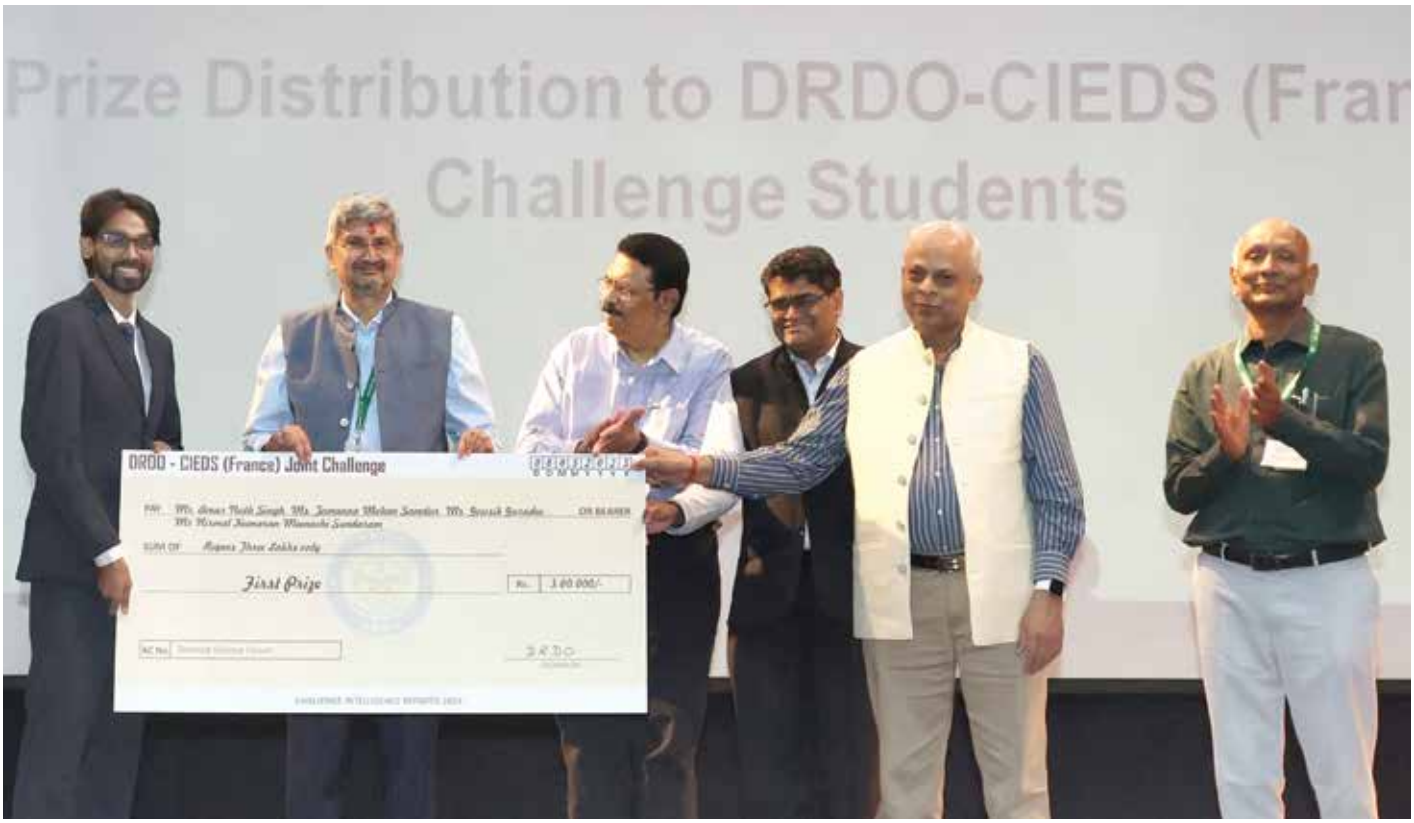
45th Year of Publication

JUNE 2025 | VOLUME 45 | ISSUE 06

LABORATORY CORRESPONDENTS

Ahmednagar	:	Shri RA Shaikh, Vehicle Research and Development Establishment (VRDE)
Ambernath	:	Dr Ganesh S Dhole, Naval Materials Research Laboratory (NMRL)
Balasore	:	Shri Mrinal Goswami, Integrated Test Range (ITR)
		Shri Ratnakar S Mohapatra, Proof & Experimental Establishment (PXE)
Bengaluru	:	Shri Satpal Singh Tomar, Aeronautical Development Establishment (ADE)
		Smt MR Bhuvaneswari, Centre for Airborne Systems (CABS)
		Smt Faheema AGJ, Centre for Artificial Intelligence & Robotics (CAIR)
		Dr Josephine Nirmala M, Combat Aircraft Systems Development & Integration Centre (CASDIC)
		Dr Sanchita Sil & Dr Sudhir S Kamble, Defence Bioengineering & Electromedical Laboratory (DEBEL)
		Dr V Senthil, Gas Turbine Research Establishment (GTRE)
		Smt Saima Bashir, Electronics & Radar Development Establishment (LRDE)
		Ms Mita Jana, Microwave Tube Research & Development Centre (MTRDC)
Chandigarh	:	Dr Pal Dinesh Kumar, Terminal Ballistics Research Laboratory (TBRL)
	:	Dr Anuja Kumari, Defence Geoinformatics Research Establishment (DGRE)
Chennai	:	Shri K Anbazhagan, Combat Vehicles Research & Development Establishment (CVRDE)
Dehradun	:	Shri DP Tripathi, Defence Electronics Applications Laboratory (DEAL)
		Shri JP Singh, Instruments Research & Development Establishment (IRDE)
Delhi	:	Shri Vikas Kashyap, Centre for Personnel Talent Management (CEPTAM)
		Shri Hemant Kumar, Centre for Fire, Explosive & Environment Safety (CFEES)
		Shri Santosh Kumar Choudhury, Defence Institute of Psychological Research (DIPR)
		Smt Arun Kamal, DPARO&M, DRDO HQrs
		Dr Navin Kumar Soni, Institute of Nuclear Medicine and Allied Sciences (INMAS)
		Dr Sujata Dash, Institute for Systems Studies & Analyses (ISSA)
		Shri Ashok Kumar, Scientific Analysis Group (SAG)
		Dr Rupesh Kumar Chaubey, Solid State Physics Laboratory (SSPL)
Gwalior	:	Dr MK Meghvansi, Defence R&D Establishment (DRDE)
Haldwani	:	Dr Atul Grover, Defence Institute of Bio-Energy Research (DIBER)
Hyderabad	:	Shri Hemant Kumar, Advanced Systems Laboratory (ASL)
		Shri Srinivas Juluru, Defence Research and Development Laboratory (DRDL)
		Shri Ch Narasimhachari, Defence Electronics Research Laboratory (DLRL)
		Shri S Shashi Nath, Defence Metallurgical Research Laboratory (DMRL)
Jagdalpur	:	Shri Khilawan Singh, SF Complex (SFC)
Jodhpur	:	Shri DK Tripathi, Defence Laboratory (DL)
Kanpur	:	Dr Mohit Katiyar, Defence Materials & Stores Research & Development Establishment (DMSRDE)
Kochi	:	Smt Letha MM, Naval Physical & Oceanographic Laboratory (NPOL)
Leh	:	Dr Dorjey Angchok, Defence Institute of High Altitude Research (DIHAR)
Mussoorie	:	Shri Sunil Bhandari, Institute of Technology Management (ITM)
Mysuru	:	Dr M Palmurugan, Defence Institute of Bio-defence Technologies (DIBT)
Nasik	:	Shri Ashutosh Sharma, Advanced Centre for Energetic Materials (ACEM)
Pune	:	Shri Ajay K Pandey, Armament Research and Development Establishment (ARDE)
		Dr Vijay Pattar, Defence Institute of Advanced Technology (DIAT)
		Dr Ganesh Shankar Dombe, High Energy Materials Research Laboratory (HEMRL)
Tezpur	:	Dr KS Nakhuru, Defence Research Laboratory (DRL)
Visakhapatnam	:	Smt Jyotsna Rani, Naval Science & Technological Laboratory (NSTL)

Contents



A CELEBRATION OF SCIENTIFIC EXCELLENCE : DRDO OBSERVES NATIONAL TECHNOLOGY DAY 2025

Defence Science Forum, (DSF) DRDO marked National Technology Day 2025 (NTD 2025) with an engaging and impactful event on 8 May 2025 at Metcalfe House, Delhi, in commemoration of the successful nuclear tests conducted at Pokhran in 1998 and celebrating the crucial role of science and technology in national progress. The event featured thought-provoking keynote addresses by eminent dignitaries, the release of key publications and initiatives, and the conferment of commendation certificates, recognizing excellence and innovation.

The event presided over by Dr Samir V Kamat, Secretary DDR&D & Chairman DRDO, and witnessed the presence of dignitaries including Director Generals, Directors, Additional FA, and IFA. Chief Guest Dr Amit Patra, Director IIT BHU, gave an insightful talk on the theme "Integrated Approach in Science and Technology for a Sustainable Future". The address underscored the importance of multi-disciplinary collaboration and integrated efforts to drive sustainable development and technological advancements.

The Guest of Honor, Dr Shivkumar Kalyanaraman, CEO Anusandhan National Research Foundation (ANRF), delivered a compelling talk on “Catalyzing India’s Rise as a Research and Innovation Powerhouse,” highlighting India’s growing stature in the global R&D landscape and the need to foster innovation ecosystems that can propel the nation forward.

The special guest of the occasion, Shri Ramesh Arunachalam, Intelligence Architect-AI and Transformative Technologies, shared valuable insights on “The Rise of Enabling Intelligence and its Application to Defence,” focusing on emerging technologies like AI and their transformative potential in strengthening national security.

The theme for this year NTD is “YANTRA—Yugantar for Advancing New Technology, Research & Acceleration.” The word Yantra, deeply rooted in India’s scientific and cultural heritage, represents not just mechanical ingenuity but also symbolic power—of systems, synergy, and scalable solutions. Yugantar, meaning an epochal shift, is emblematic of the country’s momentum in transitioning from technology adaptation to global technology leadership.

The event was marked with the release of Procurement Manual 2025. Adoption of this manual would provide a fillip to the indigenous development and realization of strategic products/ technologies. It will further allow industry, startups, and MSMEs to work in a welcoming setting with the procuring entities to develop critical defence technologies thereby furthering our goal to achieve Atmanirbharta in defence. The event also witnessed the release of STEC pamphlets.

STEC guidelines are compiled in 24 different STEC pamphlets on

various subjects pertaining to the handling, storage, and transport of explosives. Technology Spectrum, Technology Focus, the Hindi magazine "Antriksh Shakti," and the monograph "Microwave Technology ka Raksha Kshetra mein aham Yogdan" were also released during the event.

Commendation certificates were conferred on scientists and engineers for their extraordinary work and contributions, recognizing their commitment to excellence and innovation.

For the first time in the country, the CEIDS Challenge (Challenge Intelligence Repartie 2024-25) has been jointly organized by DFTM, DRDO, and the Interdisciplinary Centre for Defence & Security (CIEDS) in association with Agency de Innovation de defence (AID), DGA, France. The challenge was focused on "Programming a Swarm of Drones for Rescue Missions". The competition aimed to develop a decentralized control system for drones to explore unknown, difficult-to-access, and potentially dangerous areas.

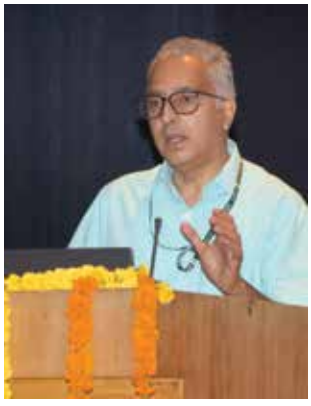
Three teams represented the country in the final round of evaluations at Paris in March 2025. Prizes were awarded to the team of students who secured the top 3 positions in the 'Swarm Rescue Challenge 24-25'.

In recognition of exceptional research, DSF honoured three selected scientist orators with the medallions and certificates to mark this day: Dr Amit Kumar Gupta, Sc 'F', R&DE (E), Pune; Ms Devanahalli Sunil Archana, Sc 'C', RCI, Hyderabad and Shri Rahul Bhatt, SC 'F', CHESS, Hyderabad.

During the occasion, the dignitaries released DRDO Technology Spectrum, a compilation of the orations delivered by DRDO scientists. The dignitaries also released the DRDO Monograph on "Microwave Technology ka Raksha Kshetra Mein Aham Yogdan".

"Antriksh Shakti," the in-house magazine of DSP, Hyderabad, "Guidelines for Personal Protective Equipment (PPE) in DRDO" (CFEES), and "Technology Focus" (DESIDOC) were also released during the event.

Dr UK Singh, Chief Mentor DSF & DG (SSS), introduced the guests and commended the organization's significant strides in advancement, highlighting the steady and focused efforts driving its success. Dr N Ranjana, Member Secretary DSF & Director, DFTM, in her vote of thanks, appreciated the unwavering dedication to technological excellence, which continues to position the organization as a leader in innovation and impact.



The NTD celebration was a truly exceptional occasion, reflecting the spirit of innovation and progress that defines our work. The event served as a platform to proudly showcase our remarkable achievements in technology and our continued pursuit of excellence in the field.

The following laboratories of DRDO also celebrated NTD 2025 at their respective locations:

ACEM, Nasik

The Advanced Centre for Energetic Materials (ACEM), Nasik, celebrated National Technology Day (NTD 2025) on 14 May 2025. The event was graced by Shri Adapa Madhusudhana Rao, Sc 'G', GD (R&QA) DRDL, Hyderabad, as the Chief Guest. Shri TV Jagadeeswar Rao, OS & General Manager, ACEM, addressed the gathering and stressed the importance of technology development to the nation. He emphasized the significant technologies ACEM is pursuing, which will shape the country's future for the next decade. He also motivated young scientists to give more impetus to R&D and improve the scientific temperament. Shri Ashutosh Sharma also addressed the gathering and elaborated on the significance of the technology day and the importance of technology and innovation.

The event also marked the release of the annual report for the year 2024. Technology Day presentations were delivered by Shri Aniket B Kumbhar, Sc 'B' on 'Hyper-elastic Modelling in Propellant' and Shri Ankit Deval, TO 'A' on 'Process Monitoring of Propellant Mixing using AI/ML Technique'.

Chief Guest Shri Rao delivered a keynote address on "Mission Quality—an Introspection". He reviewed all the development processes involved in the ANSP projects, emphasizing the lessons learned.

DMRL, Hyderabad

Defence Metallurgical Research Laboratory (DMRL), Hyderabad celebrated NTD 2025 on 16 May 2025. The program commenced with a warm welcome from Dr Sarabjit Singh, Sc 'F', who introduced the day's distinguished orator, Shri B Ramakrishna, Sc 'G', Associate Director, DMRL. The session was presided over by Dr R Balamuralikrishnan, OS & Director, DMRL. In his oration titled "Development of Armour Technologies for Various Defence and Strategic Applications", Shri Ramakrishna talked about research efforts and achievements in realizing various armour solutions including futuristic approaches. Shri Ramakrishna emphasized the successful technology transfer of armour solutions for critical defence platforms such as the Mi-17-IV helicopters, MBT Arjun Mk-1A, NGMBT, and WhAP. The oration received an enthusiastic response from the audience. Dr Balamuralikrishnan presented Shri Ramakrishna with the NTD 2025 medal and certificate.

INMAS, Delhi

Dr Himanshu Ojha, Sc 'F', delivered the NTD 2025 oration on 'Purnavartan (ReGen): A Portable Device for Healing Traumatic Wounds in Battlefields During Golden Hours' on 13 May 2025 at Institute of Nuclear Medicine and Allied Sciences (INMAS), Delhi. In his oration, he showed the journey of the development of a portable device for the faster healing of traumatic wounds. The device works with a hybrid concept, which is an amalgamation of topical oxygen exposure and negative pressure suction techniques. It has unique features, like it can be used at the site of injury, its portability, and cost-effectiveness. The device has been developed as an international regulatory compliance with a preliminary design review and critical design review. Dr Sudhir Chandna, OS & Director, INMAS, presented NTD medal and commendation certificate to Dr Ojha.

IRDE, Dehradun

Instruments Research & Development Establishment (IRDE), Dehradun, celebrated NTD 2025 on 13 May 2025 with great enthusiasm to mark the anniversary of the Pokhran Nuclear Tests. Shri Anurag Kumar Srivastava, Sc 'F,' delivered an NTD oration on 'IRST Technologies'. He explained about the 'Infrared Search & Track' technology being developed by IRDE. Dr Ajay Kumar, OS & Director IRDE inaugurated the event. He highlighted the importance of the day towards the success and achievements of scientists, researchers, engineers, and all others involved in the successful conduction of three nuclear tests at the Indian Army's Pokhran Test Range in Rajasthan. Dr Ajay Kumar commended Shri Srivastava and awarded an NTD medal and certificate to him.

ISSA, Delhi

The Institute for Systems Studies & Analyses (ISSA), Delhi, celebrated NTD 2025 on 9 May 2025. Shri Augniv Dasgupta, Sc 'B' delivered an oration on 'Deep Learning-based Cyclone Trajectory Prediction using Temporal Convolution Network'. The event was attended by all the employees and service officers of the laboratory.

ITM, Mussoorie

NTD 2025 was celebrated at the Institute of Technology Management (ITM), Mussoorie, on 14 May 2025. Shri Sunil Bhandari, TO 'B,' welcomed the audience and provided a brief overview of the historical background and significance of the day. Shri Akshay Lakhanpal, Sc 'D' delivered a talk on 'Ramjets & Scramjets: Technological Trends & Forecasting the Future of Airbreathing Missile Propulsion'. Shri Lakhanpal highlighted the current status of air-breathing missile propulsion systems in the country and the way forward. Shri SP Dobhal, Director ITM, also addressed the gathering and highlighted the relevance of this year's theme as per the Prime Minister's vision to transform the nation from technology adaptation towards technology leadership. The event concluded with a vote of thanks by Dr A Gourav Rao, GP Head, DS.

LRDE, Bengaluru

NTD 2025 was celebrated in Electronics & Radar Development Establishment (LRDE), Bengaluru on 9 May 2025. As part of the celebration, Shri Pazhanivel S, Sc 'G' delivered an oration on 'Technological Challenges in Mechanical Design and Development of Airborne

Radar for Fighter Aircraft'. He was felicitated with medal and commendation certificate by Director, LRDE. On the occasion, Shri Gampala Viswam, DS & Director, LRDE presided over the function and addressed the gathering on the importance of the Day highlighting the significant technological achievements and contributions made by LRDE.

NMRL, Ambernath

NTD 2025 was celebrated on 9 May 2025 at Naval Materials Research Laboratory (NMRL), Ambernath. Shri Satyendra Kumar Khunte, Sc 'D' delivered the oration on "Welding Technologies for Futuristic Underwater Platforms: Challenges, Innovation and Support". Dr Suman Roy Choudhury, OS & Director, NMRL presented citation to Shri Khunte. Dr Choudhury address to NMRL employees highlighted the importance of development of technologies within India for strategic applications to reduce dependency on foreign countries. He encouraged the scientists of NMRL to adopt systematic planning and rigorous execution in DRDO projects to ensure the timely delivery of products to the end Users.

NPOL, Kochi

Naval Physical and Oceanographic Laboratory (NPOL), Kochi, celebrated the NTD 2025 on 13 May 2025 to mark the technological advancement in the country. The NTD oration was delivered by Dr Arunkumar KP, Sc 'G' on 'Chirping to See: Advancing Sonar for Acoustic Imaging'. The oration covered everything from nature's echolocating dolphins to modern high-performance sonars. This oration bridges Indian advancements in the field with the state-of-the-art, illustrating how chirp-based sonar technologies are reshaping underwater imaging for our scientific exploration and maritime security. The oration unfolds the use of wideband acoustic chirp signals in three recent technology advances by NPOL in: (i) low-frequency imaging sonar for detecting and locating objects buried under the seabed, (ii) high-frequency imaging sonars, and (iii) underwater communications and acoustic positioning sonar. The oration concludes by exploring the role of chirps in future sonar systems. Dr D Seshagiri, OS & Director, NPOL, presented the NTD medal and commendation certificate to the technology day orator.

NSTL, Visakhapatnam

NTD 2025 was celebrated at the Naval Science & Technological Laboratory (NSTL), Visakhapatnam, on 12 May 2025. Sri Sajan P John, Chief Operating Officer, Kochi Water Metro Limited, Kochi, was the Chief Guest. The program commenced with a welcome address by Sri K Srikanth, Sc 'F' & Chairman NTDC-2025. Dr Abraham Varughese, OS & Director NSTL in his address said that a nation can be strengthened if the technological advancements are fruitfully utilized to the maximum. He urged the NSTL fraternity to work in a smart and innovative manner towards developing indigenous, technologically advanced underwater systems. Chief Guest Sri John opined that technology and its advancements are the solutions to various challenges of the future. He presented details of Kochi Water Metro from inception to realization. The oration on 'Thermal Suppression of Gas Turbine Exhaust in Compact Tunnel of Warship' was delivered by Sri Khagesh Kumar Choudhary, Sc 'E'. Dr HN Das, Outstanding Scientist; Smt DR Rajeswari Devi, Sc 'G'; officers, staff; Sri A Sunil, President of NSTL Civil Employees, participated in the event.

HIGH PRESSURE POLYMERIC MEMBRANE FOR SEA WATER DESALINATION DEVELOPED BY DMSRDE

Defence Materials & Stores Research & Development Establishment (DMSRDE), Kanpur, a premier laboratory of DRDO engaged in R&D of non-metallic materials. The laboratory has developed a range of advanced materials technologies. One of its achievements in advanced materials and products is the recent development of indigenous high-pressure desalination membranes for the desalination of seawater. Last year, on 18 July 2024, Deputy Director General HK Sharma of the Indian Coast Guard (ICG), along with his team, visited DMSRDE and projected a requirement for high-pressure desalination membranes.

DMSRDE took up the challenge and carried out a feasibility study for indigenous development of membranes for desalination plants in ICG ships based on the operational requirements of Coast Guard Headquarters (CGHQ). DMSRDE has developed a nanoporous multilayered polymeric membrane for high-pressure seawater desalination to address the serious challenge of stability when exposed to chloride ions in saline water. This R&D was led by Dr Debmalya Roy, Sc 'G' & Head, Nanoscience & Coating Division. Dr Subhash Mandal, Sc 'E' and the team, including Mr Rajat Jha, Sc 'B' and Mr Aditya Vesh, Technical Officer 'C' carried out the successful development of this membrane. The R&D was completed in a record time of 8 months. DMSRDE, along with ICG, has carried out technical trials successfully in the existing desalination plant of the Offshore Patrolling Vehicle (OPV) of ICG. The initial safety and performance trials of DMSRDE-developed polymeric membranes are fully satisfactory with respect to the operational requirement of ICG. A salt elimination efficiency of 99 % was achieved, reducing the conductivity of the feedstock seawater from 55,000 µS/cm to 395 µS/cm at a pressure of 60 bar and producing 18.5 tons per day. This membrane will be a boon for desalination of seawater in coastal areas after certain modifications. This represents another step taken by DMSRDE in the journey towards Atmanirbhar Bharat.

DRDO ACHIEVES SIGNIFICANT MILESTONE IN SCRAMJET ENGINE DEVELOPMENT

Conducts Active Cooled Scramjet Subscale Combustor ground testing for over 1,000 seconds

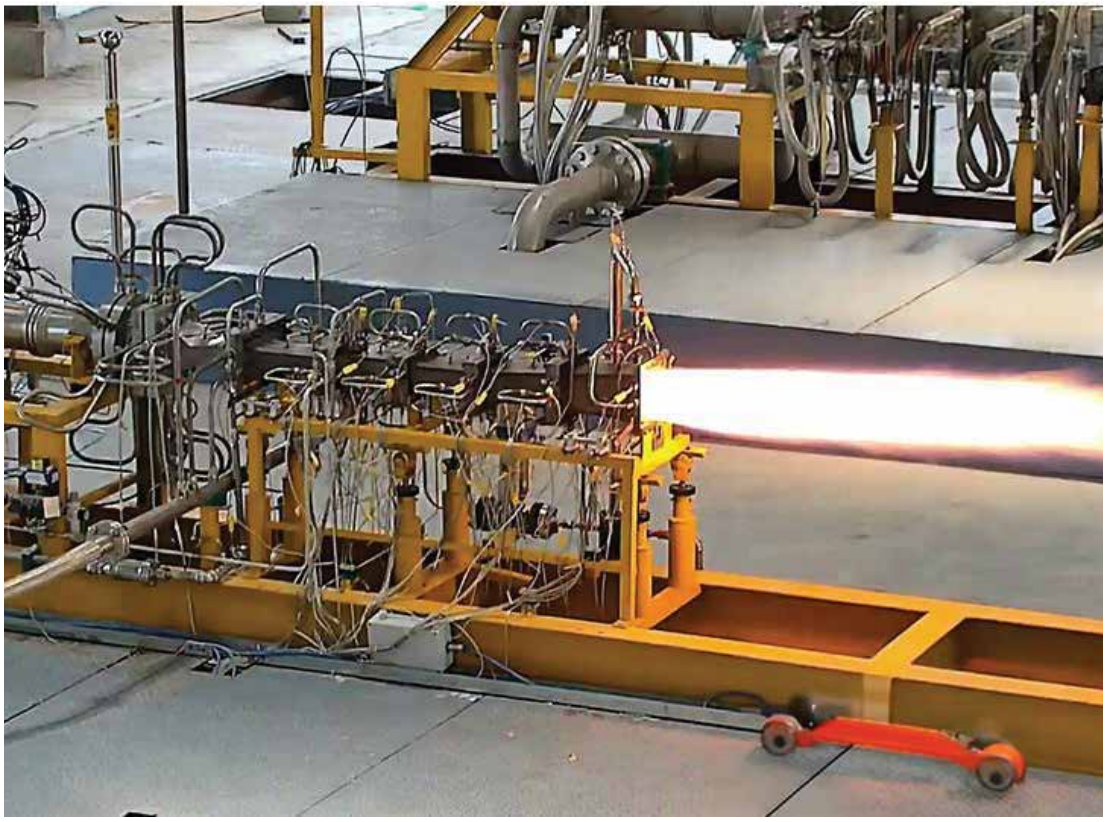
Defence Research & Development Laboratory (DRDL), Hyderabad, has achieved a major victory in the field of hypersonic weapon technology. DRDL conducted long-duration Active Cooled Scramjet Subscale Combustor ground testing for more than 1,000 seconds at the newly built state-of-the-art Scramjet Connect Test Facility at Hyderabad on April 25, 2025.

The ground test is in continuation of the earlier test reported for 120 seconds in January 2025. With the successful test, the system will soon be ready for full-scale, flight-worthy combustor testing.

Hypersonic cruise missiles are a class of weapons that can travel more than five times the speed of sound (> 6100 kmph) for long durations and are powered by air-breathing engines. Air-breathing propulsion systems, which have supersonic combustion, play a critical role in long-duration cruise conditions. This test validates the design of the long-duration scramjet combustor as well as the test facility. It is an outcome of an integrated effort put in by the DRDO laboratories\along with industry & academia and paves a strong base for the nation's Hypersonic Cruise Missile Development Program.

Hon'ble Raksha Mantri Shri Rajnath Singh complimented DRDO, industry partners, and academia for the remarkable achievement. He termed the success as a reflection of the government's strong commitment to realizing critical hypersonic weapon technologies for the nation.

Secretary, Department of Defence R&D, & Chairman DRDO Dr Samir V Kamat congratulated Director General (Missiles & Strategic Systems) Shri U Raja Babu, Director DRDL Dr GA Srinivasa Murthy, and the complete team for demonstrating the supersonic combustion for more than 1,000 seconds involving cutting-edge technologies.



COMBAT TRIALS OF MULTI-INFLUENCE GROUND MINE (MIGM)

The Multi-Influence Ground Mine (MIGM) is an advanced underwater naval sea mine designed and developed by the Naval Science & Technological Laboratory (NSTL), Visakhapatnam. It is outfitted with multi-influence sensors for detection, validation, and detonation of surface ships or submarines. The onboard electronics, i.e., the Advanced Mine Embedded Computing System (AMECS), which is a Target Detection Device (TDD), use state-of-the-art technology with multi-processor architecture for optimizing the power consumption. The advanced mine fire logics developed in-house at NSTL incorporate multi-sensor data fusion bounded by time and can classify the targets based on the tonnage and can fire at a specific target. MIGM is equipped with an EBW exploder designed and developed by Terminal Ballistics Research Laboratory (TBRL), Chandigarh, and uses explosives developed by High Energy Materials Research Laboratory (HEMRL), Pune. Operational scenarios include both defensive and offensive mining situations.

Status:

- MIGM has been developed in collaboration with the Indian industry partners.
- MIGM has completed the User Associate trials and is nearing completion of the User Evaluation Trials. The Indian Navy has initiated an AON for the procurement of MIGMs.
- As part of User Evaluation Trials (UETs), the combat firing of MIGM (with reduced explosive) was successfully conducted. Hon'ble Raksha Mantri Shri Rajnath Singh complimented DRDO, the Indian Navy, and industry on this achievement. He said that system would further enhance the undersea warfare capabilities of the Indian Navy.

DRDO CONDUCTS MAIDEN FLIGHT-TRIALS OF STRATOSPHERIC AIRSHIP PLATFORM

DRDO successfully carried out maiden flight trials of the Stratospheric Airship Platform from the Sheopur Trial Site in Madhya Pradesh on May 03, 2025. Developed by the Aerial Delivery Research and Development Establishment (ADRDE), Agra, the airship was launched carrying an instrumental payload to an altitude of around 17 km.

Data from onboard sensors was received and would be utilized for the development of high-quality fidelity simulation models for future high-altitude airship flights.

Envelope pressure control and emergency deflation systems were deployed in flight for their performance evaluation. The trial team recovered the system for further investigation. The total duration of the flight was about 62 minutes.

Hon'ble Raksha Mantri Shri Rajnath Singh has congratulated DRDO for the successful maiden flight-trial of the system.

He stated that this system will uniquely enhance India's earth observation and intelligence, surveillance, and reconnaissance

capabilities, making the country one of the few countries in the world having such indigenous capabilities.

Secretary, Department of Defence R&D & Chairman DRDO Dr Samir V Kamat congratulated the DRDO team involved in the design, development, and trial of the system. He said the prototype flight is a milestone towards the realization of lighter-than-air high-altitude platform systems that can remain airborne for very long durations at stratospheric heights.

DMRL TRANSFERS CRITICAL RADOME TECHNOLOGY TO INDUSTRY

Defence Metallurgical Research Laboratory (DMRL), Hyderabad, a leading research facility of DRDO specializing in metallurgy and materials science, has successfully transferred an advanced materials technology, i.e., 'Manufacturing of Fused Silica Radomes by Cold Isostatic Pressing and Sintering Route,' to industry partners. This milestone marks a significant advancement in indigenous materials technology for strategic applications.

The technology enables production of high-quality fused silica radomes—protective covers for crucial missile sensors—via Cold Isostatic Pressing (CIP) + Sintering technology. High yield, superior electromagnetic and mechanical properties, and heat resistance leading to better performance are other highlights of this technology. Successfully tested and ready for large-scale production, it supports key defence programs and enhances self-reliance in missile systems. An Indian patent application (No: 201611032025) has also been filed for the technology.

The formal ToT ceremony was held on 1 May 2025 at DMRL, Hyderabad, where Dr RV Hara Prasad, DS & DG (NSM), and Dr R Balamuralikrishnan, OS & Director, DMRL, officially handed over the Licensing Agreement for Transfer of Technology (LAToT) document to Shri Parth Patel & Shri Amrut I Patel, Directors of M/s Carol Zircolite Pvt. Ltd., marking a significant milestone.

Dr Prasad commended the efforts that fueled the research and development process and successful technology transfer. He appreciated DMRL's commitment to fostering industry-research partnerships and for advancing technological innovations that will have a substantial impact going forward.

Industry partners expressed their excitement and confidence in leveraging this technology to enhance their product portfolio and contribute to the nation's technological progress.

This technology transfer underscores DMRL's commitment towards enabling Atmanirbharta and continuing the march towards Viksit Bharat.

DST & DRDO JOIN HANDS TO STRENGTHEN GROUND-BASED SPACE SITUATIONAL AWARENESS

An institute of the Department of Science and Technology (DST) has signed a Memorandum of Understanding (MoU) to partner with a Defence Research and Development Organisation (DRDO) institute to utilize observational facilities at the Aryabhatta Research Institute of Observational Sciences (ARIES) and its scientific expertise in exploration of space to strengthen India's capabilities in ground-based Space Situational Awareness (SSA).

The MoU was signed between ARIES, Nainital, an autonomous institute of DST, and Instruments Research & Development Establishment (IRDE), Dehradun, a laboratory of DRDO, by Dr Manish Kumar Naja, Director, ARIES, and Dr Ajay Kumar, Director, IRDE, on 13th May 2025 at IRDE, Dehradun.

ARIES is a premier research institute in the field of astronomy, astrophysics, and atmospheric sciences and hosts state-of-the-art national observing facilities, including the 3.6 m Devasthal Optical Telescope and ST Radar system.

IRDE is a leading institution engaged in the design and development of electro-optical surveillance systems for the Armed Forces across ground, naval, airborne, and space platforms.

The scope of the MoU includes the use of observing facilities at ARIES for monitoring and data acquisition on space objects, jointly developing electro-optics-based systems for astronomy and SSA applications, developing image processing and data analysis techniques by integrating artificial intelligence and machine learning (AI/ML), knowledge exchange, training activities, and capacity building through scientific & technical research and development.

HANDING OVER OF INDIGENOUS TECHNOLOGY FOR MINIATURE STIRLING CRYOCOOLER TO SPECIAL INSTRUMENTS WORKSHOP (BSF)

Solid State Physics Laboratory (SSPL), Delhi, handed over the indigenously developed "Helium Gas Refilling Module" to Special Instruments Workshop (SIW), BSF for miniature stirling cryocooler in Handheld Thermal Imagers (HHTIs) on 19 May 2025. The facility will boost uptime, extend equipment life, and cut turnaround time-ensuring critical border surveillance and reducing operational costs.

FOUNDATION LAYING CEREMONY OF CEPTAM'S STATE-OF-THE-ART TRAINING CENTRE

The Centre for Personnel Talent Management (CEPTAM), Delhi, observed the foundation-laying ceremony of its state-of-the-art Training Centre for DRTC and Admin & Allied Cadre of DRDO at Metcalfe House Complex, Delhi. The initiative is aimed at strengthening the intellectual capital of the DRDO. The ceremonial foundation stone was laid by Dr Samir V Kamat, Secretary, DD R&D & Chairman DRDO. He emphasized the importance of continuous learning and innovation in achieving the targets and goals of DRDO.

The occasion was further graced by the esteemed presence of dignitaries of DRDO, including Dr UK Singh, DS & DG (SSS); Shri Lal Chand Mangal, DS & DG (TM); Smt U Jeya Santhi, OS & DG (HR); Dr (Smt) Chandrika Kaushik, OS & DG (PC & SI); Dr Manu Korulla, OS & DG (R&M); Dr Manoranjan Patri, Chairman, CEPTAM; Smt Sunita Vadhera, Director, CEPTAM; Dr B Choubey, Director, DCW&E; Shri Sangeet, IFA (R&D); and Shri BK Singh, CCE (R&D), Delhi, along with Directors of DRDO HQrs. and of various local laboratories & establishments, and other DRDO Officials. CCE (R&D), Delhi, will oversee the development of the upcoming facility.

Director, CEPTAM, highlighted the need of the centre mentioning various important ongoing trainings and showcasing CEPTAM's evolving role in capacity building and skill enhancement. She extended her sincere thanks to all dignitaries and guests for their distinguished presence and unflinching support.

INAUGURATION OF AUTOMOTIVE & WEAPON SYSTEM TESTING CENTRE AT CHENNAI

Dr Samir V Kamat, Secretary DD R&D & Chairman DRDO, visited the Combat Vehicles Research & Development Estt. (CVRDE), Chennai, on 17 May 2025 and inaugurated the Automotive and Weapon System Testing Centre (AWTC) at Vellanoor, Avadi. Dr Prateek Kishore, DS & DG (ACE); Dr Manu Korulla, OS & DG (R&M); Shri J Rajesh Kumar, OS & Director, CVRDE; Dr Bishwajeet Choubey, Sc 'G' & Director, DCWE; and Shri Sanjay Dwivedi, CMD, AVNL, also graced the occasion with their august presence. The AWTC, which has 26 different types of tracks, will help in testing the complete automotive performance parameters of tracked armoured fighting vehicles. The weapon system performance with less actual firing can also be tested at this test center. These performance tests will enable the tracked vehicles designed by CVRDE or any other designing agency to be checked for their reliability before being offered to the user trials in the field ranges. Further, the dignitaries unveiled the memorial of Former President of

India Bharat Ratna Dr APJ Abdul Kalam inside the CVRDE premises and paid floral tribute to Kalam's bust. The dedicated Engine Test Centre was inaugurated during the Chairman's visit, and the various features of the test facilities were briefed to the DRDO delegates. Later, the Chairman DRDO reviewed the progress of ongoing projects of CVRDE. He emphasized the necessity to maintain focus on complex technologies for armoured fighting vehicles and focus on power powerpacks.

DRDO INAUGURATES CENTRE FOR ELECTROMAGNETIC LAUNCH TECHNOLOGY TO ADVANCE RAILGUN RESEARCH

The Secretary, Department of Defence R&D, & Chairman DRDO inaugurated the Centre for Electromagnetic Launch Technology (CEMaLT), a state-of-the-art infrastructure facility dedicated to futuristic research on electromagnetic railgun technology and the development of its associated subsystems.

The inauguration ceremony was held in the presence of senior DRDO officials, including Prof. Prateek Kishore, Director General (Armaments & Combat Engineering); Dr. Manu Korulla, Director General (R&M); Mrs Chandrika Kaushik, Director General (PC&SI); and Shri A Raju, Director, ARDE.

The newly established center aims to propel India's capabilities in electromagnetic railgun technology, which enables the launch of projectiles at hypersonic velocities without the use of conventional propellants. This breakthrough technology is expected to significantly enhance the futuristic combat capabilities of the Indian Army and Navy.

The establishment of CEMaLT marks a major milestone in DRDO's pursuit of cutting-edge defence technologies aligned with India's strategic vision of technological self-reliance and modernisation.

KSHITIJ 2.0-CONFERENCE OF PROJECT DIRECTORS OF ECS CLUSTER AT DEAL

Defence Electronics Applications Laboratory (DEAL), Dehradun, conducted KSHITIJ 2.0, the second edition of the Project Directors Conference of Electronics and Communications System (ECS) cluster, during 29 April 2025 to 1 May 2025. Dr BK Das, DS & DG (ECS), inaugurated the conference, and in his inaugural talk motivated all the Project Directors to think like a user before designing the technology and to be creators rather than chasers and quoted that time is the most important asset and planning is the most important weapon for the success of a project.

The conference provided a platform for Project Directors to interact with experts from industry and academia in various domains for knowledge sharing, learning about emerging trends, fostering continuous improvements and innovation in project management capabilities. In addition to this, the conference featured discussions on managing organizational behavior issues and audit-related matters.

During the conference, the Transfer of Technology agreement for the L/S Band Digital Troposcatter Communication System to BEL and Compact Troposcatter Communication to M/s HFCL was handed over.

At the end of the conference, homage was paid to the Pahalgam victims by all attendees.

DRDO YOUNG SCIENTISTS MEET 2025 AT IRDE

Instruments Research & Development Establishment (IRDE), Dehradun, and Directorate of Human Resources Development (DHRD) jointly organised a three-day DRDO Young Scientists Meet (YSM) during 7-9 May 2025 at IRDE. Scientists from the Defence Electronics Application Laboratory (DEAL) were also involved in organisation of the event. This was the 11th edition of DRDO YSM, with the core theme 'Together We Grow'. The sub-theme was 'Agrasar,' which reinstates the idea of moving forward with a dynamic and ever-growing outlook. The event was inaugurated by Dr Samir V Kamat, Secretary, DD R&D & Chairman, DRDO. Dr BK Das, DS & DG (ECS), and Smt U Jeya Santhi, OS & DG (HR), also graced the event. A total of 203 young scientists from all DRDO laboratories and DRDO Young Scientists Laboratories participated in the event. Shri Harshpreet Singh Bhatia, Sc 'D' and Coordinator of YSM 2025, welcomed the dignitaries & participants and briefed them about the various events planned during the YSM 2025. The aim of YSM was to promote fraternity among the young scientists of DRDO and provide an opportunity to interact with the eminent personalities of the academic and scientific world.

Dr Ajay Kumar, OS & Director IRDE appreciated the young scientists in defence R&D

towards Aatmanirbhar Bharat. Smt Santhi highlighted the role of young scientists in innovation and stressed their involvement in various defence projects. Dr Das described the young scientists as the torchbearers of defence research and believed in their commitment and dedication in achieving the excellent results.

In his inaugural address, Dr Samir V Kamat, Secretary, DD R&D & Chairman, DRDO, expressed that such gatherings play a pivotal role in empowering the next generation of scientists by providing them with a platform to explore pioneering ideas and push the boundaries of technological advancement in defence.

Shri Manoj Kumar Dhaka, OS & Director DEAL delivered the valedictory address. Dr Ajay Kumar also interacted with the young scientists during the valedictory function.

RAISING DAY CELEBRATIONS AT DTTC, LUCKNOW

The Defence Technology & Test Centre (DTTC), Lucknow, was inaugurated on 11 March 2024 by Hon'ble Raksha Mantri. It is progressing and endeavoring to achieve its mandate through the execution of its planned technical activities. On the 11 March 2025, DTTC celebrated its first Raising Day. On the occasion, various activities like the inauguration of a mechanical workshop, tree plantation, award distribution, and a webinar were conducted. A webinar entitled 'Indian Aerospace & Defence Manufacturing Ecosystem: Next-Gen Skill Challenges' was conducted under the skill development program at DTTC, and was attended by more than 50 participants from various industries and academic institutes. It was inaugurated by the Chief Guest, Dr Mayank Dwivedi, OS & Director, DMSRDE. Dr Suman Roy Chaudhary, OS & Director, NMRL, Ambernath, and Shri SK Barve, GM HAL (ASERDC), Lucknow, also graced the occasion. Director, DMSRDE, encouraged the DTTC to identify the needy industries and provide them with customized technical solutions. In the technical session, distinguished speakers from EDS, Dassault Systems, E-Spin Technologies, IIT Kanpur, and DTTC delivered the talk. At the end, a panel discussion was conducted under the chairmanship of Director, DMSRDE.

RAISING DAY CELEBRATION AT HEMRL

High Energy Materials Research Laboratory (HEMRL), Pune, celebrated its 117th Raising Day on 3 March 2025. Prof. Prateek Kishore, DS & DG (ACE), was the Chief Guest and Mr Chandrakant Dalvi, IAS (Retd.), was the Guest of Honour for the occasion. The event started with paying tribute to Dr APJ Abdul Kalam's statue with a garland by the Chief Guest, Guest of Honour, Director HEMRL, and other dignitaries.

The occasion also included a tree plantation program. The Chief Guest and other dignitaries planted trees on DSC ground. A melodious cultural program was organized for all HEMRL employees. The Chief Guest Prof. Kishore, distributed DRDO commendation certificates as a token of appreciation and motivation to the teams/individuals who have contributed significantly towards the achievement of the laboratory. HEMRL employees who had completed 25 years of service in DRDO were also felicitated by the esteemed guests.

Various sports events like Box Cricket, volleyball, walkathons, dodgeball, and games for ladies were organized. The winner and runner-up teams were felicitated with trophies and prizes.

SUCCESS MEET OF PINAKA MBRL AND ATAGS

Armament Research and Development Establishment (ARDE), Pune, organized success meet of the MBRL Pinaka Rocket Launcher System and Advanced Towed Artillery Gun System (ATAGS) on 30 April 2025. Contracts for acquisition have been placed for both the systems, subsequently leading to induction into armed services. Dr SV Kamat, Secratery DD R&D & Chairman, DRDO, graced the occasion with his presence. All the present and retired team members of PINAKA and ATAGS were present to commemorate the successful culmination of their collective efforts.

Dr PK Mehta, DS & DG (ACE) Retd.; Dr SV Gade, DS & DG (ACE) Retd.; Shri KJ Daniel, Sc 'H' & PD (Pinaka) Retd.; Shri KPS Murthy, OS & Director, HEMRL Retd.; Shri PT Rojatkar, OS & Director, NMRL Retd.; Dr Kishore, DG (ACE); Shri MV Ramesh Kumar, Sc 'H' & AD (PINAKA); and Shri RP Pandey, Sc 'H' & AD (ATAGS) graced the occasion.

Dr Mehta in his inaugural address, said that the timelines for completing new projects are becoming progressively shorter compared to earlier projects, which is a positive development. Dr Gade remarked that during the 1990s, the facilities and resources

were limited as compared to today's advanced technology and improved facilities, thereby raising the expectation significantly from ARDE. Shri Daniel emphasized that the project was characterized by transparency and the active involvement of the entire team at every stage. Many other dignitaries shared their experience on the success of both projects. Shri Pandey shared his recollection of the ceremonial firing of ATAGS on the independence day in 2022. He acknowledged that there were initial setbacks in ATAGS; however, the team addressed the issues effectively and resolved them through dedicated efforts. Shri A Raju, OS & Director, ARDE, emphasized the significant role of ARDE in the development of armament systems. He affirmed their commitment to developing advanced systems that address the evolving landscape of defence, with the vision of making DRDO and the nation proud. Dr Kamat congratulated the entire team for their efforts and successful induction of systems into the Services. He noted that as the defence industry continues to mature, DRDO should focus on R&D while transitioning production responsibilities to industry partners.

At the conclusion of the event, all team members—both retired and presently serving—were felicitated in recognition of their valuable contribution.

REFIT OF INS SAGARDHWANI

Dr Samir V Kamat, Secetary DD R&D & Chairman, DRDO reviewed the Normal Refit (NR) of INS Sagardhwani at Garden Reach Shipbuilders and Engineers (GRSE) Limited, Kolkata. The Normal Refit commenced in May 2024 and successfully concluded. After the onboard critical review by the secretary, the ship will commence operational trials and scientific experiments soon. The Chairman was accompanied by Dr Chandrika Kaushik, DG (PC&SI); Dr D Seshagiri, OS & Director, NPOL, senior scientists from NPOL; and Indian naval officers. This was the first-ever refit done by M/s GRSE for any naval ship.

INS Sagardhwani, a research vessel, was built by M/s Garden Reach Shipbuilders and Engineers Limited, Kolkata, for the Naval Physical and Oceanographic

Laboratory (NPOL), DRDO. The ship was commissioned on 30 July 1994. The Indian Navy maintains and operates the vessel for DRDO, based at the Southern Naval Command, Kochi. The vessel has seven laboratories fitted with scientific equipment for measuring oceanographic, meteorological, geological, geophysical, and acoustic parameters both in shallow and deep waters. The vessel has facilities to moor oceanographic and acoustic instruments.

THE STEEL CUTTING CEREMONY OF AR SHIP

The steel-cutting for the Acoustic Research Ship (ARS) built for the Naval Physical and Oceanographic Laboratory (NPOL), Kochi, commenced at Garden Reach Shipbuilders and Engineers (GRSE) Limited, Kolkata, on 16 April 2025.

The steel-cutting ceremony, a significant event symbolizing the start of a shipbuilding project, was graced by Dr Samir V Kamat, Secretary, DD R&D & Chairman, DRDO, as the Chief Guest. Also in attendance were Cmde PR Hari, IN (Retd), Chairman and Managing Director, GRSE; Dr Chandrika Kaushik, DG (PC&SI), Dr D Seshagiri, Director, NPOL; senior scientists from DRDO; and senior officials from GRSE. The contract for the ARS, valued at Rs 490.98 crore, was signed between GRSE and DRDO-NPOL on 29 October 2024.

The ARS, once completed, will be 93 meters long, 18 meters wide, and 9.8 meters deep, with a gross tonnage of 5554 tons. Designed to achieve a speed of 12 knots, the vessel can accommodate up to 120 personnel. This state-of-the-art vessel will be equipped with state-of-the-art equipment and facilities, including a gondola, moon pool, and drop keel, to perform underwater acoustic and oceanographic research activities for NPOL. The vessel is equipped with a Dynamic Positioning System (DP-II). The ship is expected to be delivered in three years.

CELEBRATING THE LEGACY OF DR BR AMBEDKAR AND DR BABU JAGJIVAN RAM AT DMRL

On April 14, 2025, 'Dr BR Ambedkar Jayanti' celebration was organised by the Defence Metallurgical Research Laboratory (DMRL) SC/ST Welfare Association. The occasion was graced by Dr R Balamuralikrishnan, OS & Director, DMRL. After garlanding Dr Ambedkar's portrait, the dignitaries present reflected upon Dr Ambedkar's lasting impact on society and the continued relevance of his work. Subsequently, the 134th birth anniversary of Bharat Ratna Dr BR Ambedkar and the 117th birth anniversary of Dr Babu Jagjivan Ram were celebrated with great reverence on April 25, 2025 at DMRL.

The program began with a warm welcome from Shri Vikrant J Taksande, General Secretary, DMRL SC/ST Welfare Association. Prof. C Kaseem, Principal, University College of Arts & Social Sciences, Osmania University,

Hyderabad, graced the occasion as the Chief Guest. Dr Venkat, Sc 'F'& SC/ST Liaison Officer, in his address, highlighted Dr Ambedkar's extraordinary contributions, particularly his work in shaping the Constitution of India. Shri B Ram Babu, President, DMRL SC/ ST Welfare Association, spoke about the enduring legacy of Dr Ambedkar and Dr Babu Jagjivan Ram. Dr Balamuralikrishnan lauded Dr Ambedkar as a social reformer and reflected on his tireless efforts toward promoting equality, social justice, and eradicating discrimination.

Both events were a fitting tribute to the legacy of two great leaders whose work continues to inspire future generations.

Chief Guest, Prof. C Kaseem, delved into the academic and political achievements of Dr. Ambedkar, focusing on his struggles against discrimination, casteism, and untouchability.

Prof. Kaseem concluded his speech by encouraging all to embrace the slogan "Payback to Society" as a tribute to the sacrifices made by these leaders for the betterment of our nation.

LAUNCH OF INMAS' DATA MANAGEMENT SOFTWARE: ESACHIV

The eSachiv Portal (phase 1) of Institute of Nuclear Medicine and Allied Sciences (INMAS), Delhi, for data management of DRDS Cadre was launched by Mrs U Jeya Santhi, OS & DG (HR), DRDO HQrs on 13 May 2025 during her visit to INMAS. DG (HR) highlighted the importance of digital innovation in improving organizational efficiency and employee experience. Director, INMAS apprised the DG (HR) about ongoing activities in the laboratory and the impact of eSachiv portal in streamlining and enhancing the R&D activities of the laboratory. The software has been developed with an aim to digitize the organisational activities of INMAS for analytics and a user-friendly interface to

enhance decision-making and productivity. The development team then explained about the features of eSachiv Portal. In phase-1, the portal focuses on enhancing the research activities and performance management of DRDS Cadre of INMAS. In next phase the same system will be implemented for DRTC Cadre.

FIRE SERVICE WEEK 2025 AT HEMRL

Fire Service Week (FSW 2025) was observed in the High Energy Materials Research Laboratory (HEMRL), Pune, during 14-20 April 2025. Various events were organized and pin badges and calendar-2025 were distributed to all employees to create fire safety awareness within the laboratory. Shri Arvind Kumar, Director, CFEES, was the Chief Guest for FSW observance, organized on 15 April 2025. One minute's silence was observed by the employees of HEMRL to pay homage to brave firefighters. Technology Director, SED, highlighted an overview of FSW activities and the major achievements of the fire section during the last year. Director HEMRL addressed the gathering and stressed the importance of a fire safety culture and urged the employees to keep fire safety a priority at workplaces so that there will be zero tolerance towards fire safety violations. He urged them to make every day in the laboratory an accident-free day. Training on the Fire Fighting Hose Drill was organized and a lecture was delivered by Shri Sitakanta Behera, Sc 'F' of HEMRL, on the 'Disaster Management Plan of HEMRL'.

PARTICIPATION IN OPEN DAY FLAGSHIP EVENT

B N M Institute of Technology, Bengaluru, conducted an open day flagship event on 26 April 2025 to celebrate innovation, creativity, and engineering excellence. The Office of Director General (ECS) participated to showcase the cutting-edge products and technology innovations to a diverse audience of students, faculty, alumni, and industry partners. Dr PS Pandian, Sc 'G' and his team has participated in the event. The products from the ECS Cluster displayed during the event are 12 kW Direct Energy Weapon System, CAMOP, Air Defence Fire Control Radar (ADFCR), Dharashakti EW System, Sanchay-II System, Sarang ESM System and Through Wall Imaging Radar (TWIR).

CAREER GUIDANCE AND COUNSELLING FAIR

"Career Guidance and Counselling Fair" was organized at Gurudwara Shri Rakab Ganj Sahib, Delhi by the Delhi Sikh Gurudwara Management Committee (DSGMC) on 16 May 2025. The event was an initiative to empower youth and guide them towards professional careers. DHRD, DRDO HQrs along with DPI participated in the event alongside Indian Army, Air Force, Civil Aviation, and various universities and colleges. Representatives from DHRD interacted with students to guide and inspire them to join DRDO under its "Join DRDO" Campaign. Models of products developed by DRDO (Aakash, Agni, Brahmos, Varunastra and AEW&C) were displayed in DRDO stall that made a lot of students take keen interest in DRDO. DRDO song and "Join DRDO" video were displayed to the students for expanding awareness and cultivating fascination in them towards R&D in defence.

HRD ACTIVITIES

WORKSHOP ON GENERATIVE AI FOR SOFTWARE DEVELOPMENT

The Defence Electronics Application Laboratory (DEAL), Dehradun, conducted a workshop on Generative AI for Software Development on 24 April 2025. All Scientists, Technical officers of DEAL attended the workshop.

Shri Bhanu Pratap Singh, Sc 'G' and Ravi Shanker Sharma, Sc 'E' delivered the talks covering different perspectives of an AI system, prevalent Large Language Models (LLMs) and different ways to harness generative AI tools for coding tasks. For this, trained models were ported on project network to help code in C, C++ and Python.

AIR FORCE STANDARDISATION EXERCISE-2025

The Air Force Standardization Exercise (AFSE) 2025 was conducted at 2 Air Force Selection Board, Mysuru, during 7-11 April 2025.

Around 50 assessors representing eight service selection boards (five from the Air Force and one each from the Army, Navy, and Coast Guard) participated in this exercise. The team from the Defence Institute of Psychological Research (DIPR), DRDO, Delhi, consisting of scientists and service officers, served as technical moderators for this exercise while the statistical team worked in close coordination to compile the data efficiently.

AFSE was attended by Air Officer-in-Charge Personnel (AOP), Director DIPR, presidents of all five Air Force Selection Boards, and representatives from Service HQrs.

The Presidents' Conclave, which took place from 11 to 12 April 25, detailed all the technical aspects of the Officer Selection System.

COURSE ON MANDATORY TRAINING FOR ADMIN & ALLIED CADRE AT ITM

A course on Mandatory Training for Admin & Allied Cadre for Incumbent Chief Administrative Officers (CAOs) was organized by the Institute of Technology Management (ITM), Mussoorie, from 21 April 2025 to 2 May 2025. Shri Manoj Kumar Chilkoti, SAO-I, was the course director, and the objective of the course was to orient incumbent CAOs so that they can handle various administrative-related aspects more effectively. A total of 18 participants attended the course from different clusters of DRDO.

The course was inaugurated by the Chief Guest Smt U Jeya Santhi, OS & DG (HR), through VC, and Shri SP Dobhal, Director, ITM. The Course Director briefed about the course and highlighted the history and charter of duties of ITM. Director, ITM addressed the course participants and emphasized the involvement of the admin & allied cadre in project management, replies to audit objections of projects, etc.

Dr Jagannath Nayak, DS & Director, CHESS, chaired the valedictory function of the course. He interacted with the course participants and obtained their views on the course. The course concluded with a vote of thanks by the course director.

WORKSHOP ON WRITING CASE STUDY AT ITM

A two-day workshop on writing case studies in collaboration with the Indian Institute of Management, Visakhapatnam (IIMV), was organized by the Institute of Technology Management (ITM), Mussoorie, during 8-9 April 2025. A total of 30 senior scientists from different DRDO laboratories were in the workshop. The objective of the workshop was to equip scientists with the skills to document and communicate the project's experience through structured case studies that highlight challenges, methodologies, and innovations and bring out key learning so as to streamline and utilize organizational knowledge.

The workshop was inaugurated by Chief Guest Dr Ajay Kumar, OS & Director, IRDE, & Dr DK Panda, Sc 'G' & Officiating Director, ITM. The Chief Guest deliberated upon the importance of having in-house cases that can be used as learning tools. The workshop covered various elements of case selection, preparation, teaching notes, and evaluation so that these cases can be applied to classroom case-based learning. Prof. Deepika R Gupta, Associate Prof. IIMV, conducted the sessions during the workshop, which was highly appreciated by the participants.

The workshop concluded with a valedictory address by Chief Guest Dr G Raja Singh Thangadurai, OS & Programme Director, PJ-10 DRDL.

COURSE ON SPECIALIZED TRAINING ON ESSENTIAL MANAGEMENT SKILLS AT ITM

The mandatory training program Specialized Training on Essential Management Skills (STEMS-24) for newly promoted Scientist 'G' was organized by the Institute of Technology Management (ITM), Mussoorie, during 17-28 March 2025. Dr DK Panda, Sc 'G' was the Course Director. The objective of the course was to orient the scientists toward leadership excellence, R&D management, strategic management, and corporate functions of DRDO. A total of 99 participants attended the course from different clusters of DRDO. The course was inaugurated by Dr Sumit Goswami, Director DP&C, on 17 March 2025. Chief Guest in his address, shared his experience and highlighted the importance of provisions of DPFM. Prof. Prateek Kishore, DS & DG (ACE), interacted with the course participants during the valedictory function.

DGRE OUTREACH PROGRAMME AT NIT-JALANDHAR

Defence Geoinformatics Research Establishment (DGRE), Chandigarh, conducted an outreach program at the National Institute of Technology (NIT), Jalandhar, on 25 April 2025. The DGRE team interacted with the dean, faculty, and students of NIT, Jalandhar. Different technologies of DGRE, such as avalanche forecasting, control & mapping, and mitigation, were briefed to the students. Also, the technology areas for future collaborative research were discussed with the faculty members. The discussion was held on the development of technologies for all-terrain robotic vehicles, robust instrumentation, VR/IR, etc. The students and faculty members appreciated DGRE's efforts.

TECHNOLOGY DEMONSTRATION ON CULTIVATION OF EXOTIC LEAFY VEGETABLE

A technology demonstration entitled 'Demonstration of Modern Agro-technologies in Remote Villages of Arunachal Pradesh' was conducted during 28-30 April 2025 by Defence Research Laboratory (DRL), Tezpur, in remote border villages along the Indo-Bhutan border under the Kalaktang block of the West Kameng district of Arunachal Pradesh. The beneficiary farmers received training-cum-field demonstrations on cultivating exotic leafy vegetables and techniques for raising quality planting material.

SPECIALIZED CBRN TRAINING COURSE AT INMAS

A four-day specialized training course on CBRN Emergency Management was held for 74 Indo-Tibetan Border Police (ITBP) officers and personnel during 7-11 April 2025 at the Institute of Nuclear Medicine and Allied Sciences (INMAS), Delhi. The course focused on understanding CBRN agents and their health hazards, practical demonstrations of critical equipment, and medical management. The faculty facilitated more profound learning through interactive case studies, CBRN incident scenarios, and tabletop exercises. Practical demonstrations were conducted

on the use of critical equipment such as the Whole Body Counter, radiological agent detectors, protective gear, CBRN remotely operating vehicle—DAKSHA, unmanned aerial vehicle—NETRA, and UltraSwachh series equipment.

NATIONAL WORKSHOP ON ADVANCED LEGGED ROBOTICS 2025 IN PUNE

The National Workshop on Advanced Legged Robotics (NWALR-2025) was inaugurated on 8 May 2025 in Pune by Dr G Satheesh Reddy, Honorary Advisor to the Government of Andhra Pradesh and former Chairman of DRDO. The three-day workshop was organised by R&DE (Engineers), Pune, a premier DRDO laboratory specialising in robotic systems, in collaboration with COEP Technological University, under the aegis of the Indian Society of Systems for Science and Engineering (ISSSE), Pune Chapter.

The workshop, held from May 8 to 10, 2025, brought together over 300 participants from various scientific and strategic

institutions, including DRDO, ISRO, the Department of Atomic Energy (DAE), and the Armed Forces, as well as representatives from industry and academia.

The workshop featured technical sessions, keynote lectures, live demonstrations, and panel discussions covering a range of topics such as adaptive locomotion control, AI-based terrain navigation, energy-efficient actuation, and the design of multi-legged robotic platforms.

INVITED TALK ON MENTAL HEALTH AT NPOL

Naval Physical and Oceanographic Laboratory (NPOL), Kochi, arranged an invited talk on 'Well-Being at Workplace and Home' by Dr Anil Kumar TV, Professor & HOD, Govt. Medical College Kalamassery, Kochi, on 2 April 2025. Shri Tinto Chacko, Tech 'B,' Secretary of the Works Committee, welcomed the gathering. The talk was an exhaustive exposition of mental health, especially on keys to happiness living. Dr Anil Kumar explained the need for good nutrition, regular exercise, sound sleep, and quality time

with family, friends, and nature for mental well-being. Dr D Seshagiri, Sc 'H' & Director, NPOL, graced the occasion with his presence. Smt Remadevi, Sc 'G' & Chairperson NPOL Works Committee, coordinated the conduct of the event.

RAJBHASHA ACTIVITIES

RELEASE OF RACHANA-DMRL'S HINDI MAGAZINE

The Defence Metallurgical Research Laboratory (DMRL), Hyderabad, organized the Fourth Official Language Implementation Committee (OLIC) Meeting for FY 2024–25 on March 26, 2025. A key highlight of the event was the release of the 2024 edition of the in-house Rajbhasha magazine, 'Rachana,' by Dr R Balamuralikrishnan, Director, DMRL & Chairman, OLIC. This year's release also featured the debut of the magazine's 'Technical Special Issue', marking a significant milestone for Rachana.

The technical issue will serve as a dedicated platform for publishing technical articles related to the laboratory's

areas of expertise and is intended to complement the main publication. Dr Balamuralikrishnan expressed his delight at the release and emphasized that the initiative would be well-received by readers, helping to inspire greater enthusiasm for promoting Rajbhasha. He congratulated the team behind the publication and personally thanked all the contributing authors. Members of the OLIC also joined in celebrating the release.

During the meeting, the activities related to official language implementation over the past quarter were reviewed, and future plans for further implementation were discussed.

Higher Qualification Acquired

Shri Vinod Kumar, Sc 'F' of Institute of Nuclear Medicine and Allied Sciences (INMAS), Delhi, has been awarded PhD for his thesis entitled "Studies on Radioisotope Removal Efficiency of a Combination of Titanate Nanotubes and Polyamide Reverse Osmosis Membranes" from Guru Gobind Singh Indraprastha University (GGSIPU), New Delhi on 9 April 2025.

LRDE ANNUAL SPORTS 2025

The Electronics & Radar Development Establishment (LRDE), Bengaluru Annual Sports 2025, held from 9-11 April 2025, was a grand and vibrant celebration of fitness, camaraderie, and competitive spirit. The event witnessed huge participation from LRDE personnel across various designations and departments, reflecting the organization's commitment to holistic well-being and team-building through sports. The Chief Guest, Shri Gampala Viswam, Director, LRDE, graced the occasion and officially inaugurated the event. The inauguration began with a solemn Invocation Ceremony followed by the symbolic Lighting of the Lamp to mark the beginning of the festivities.

A wide array of sports and recreational events, catering to participants of all ages and ranks, took place over the span of three days. The LRDE Annual Sports 2025 was a resounding success, owing to the excellent planning and coordination by the organizing committee and the overwhelming participation of around 200-250 employees spread over 3 days. The event stood out for the massive turnout and enthusiastic participation from employees of all age groups and categories. The sports meet concluded with a sense of fulfillment, joy, and a renewed spirit of togetherness, echoing the values of discipline, dedication, and determination that LRDE stands for.

VISITORS TO DRDO LABORATORIES

CVRDE, Chennai

Dr Samir V Kamat, Secretary DD R&D & Chairman DRDO made a visit to Combat Vehicles Research & Development Estt. (CVRDE), Chennai on 17 May 2025 and inaugurated the Automotive & Weapon System Testing Centre (AWTC) at Avadi. Dr Prateek Kishore, DS & DG (ACE), Dr Manu Korulla, OS & DG (R&M), Shri J Rajesh Kumar, OS & Director CVRDE, Dr Bishwajeet Choubey, Sc 'G' & Director DCWE, graced the occasion with their august presence. During the inauguration, the Chairman, DRDO accoladed the efforts of CVRDE project team and CC R&D team for bringing up a world class test center for evaluating the performance of armoured fighting vehicles.

Further, the dignitaries unveiled the Memorial of Former President of India Bharat Ratna Dr APJ Abdul Kalam inside the CVRDE premises and paid the floral tribute to the Kalam's bust. The dedicated Engine Test Facility was also inaugurated during the Chairman's visit and the various features of the test facilities were briefed to the DRDO delegates.

Dr Samir V Kamat inaugurating "Engine Technology Centre" during his visit to CVRDE, Chennai

DEAL, Dehradun

Dr Samir V Kamat, Secretary DD R&D & Chairman DRDO visited Defence Electronics Applications Laboratory (DEAL), Dehradun on 7 May 2025. He was welcomed by Dr BK Das, DS & DG (ECS), Shri LC Mangal, DS & DG (TM) and Shri Manoj Kumar Dhaka, OS & Director, DEAL. A presentation was given highlighting DEAL history, products, technological advancements and the roadmap ahead. DEAL showcased its ongoing project activities and live demonstration of SDR-TAC, SDR-NC, SDR-Airborne, Naval handheld SDR, Army ManPack, Naval ManPack and CTCS.

Dr Kamat gave insightful inputs for the laboratory. He lauded the efforts put up by DEAL employees in the development of state-of-the-art products.

Shri Manoj Kumar Dhaka felicitating Dr Samir V Kamat during his visit to DEAL, Dehradun

DGRE, Chandigarh

Team of 14th Bn NDRF, Distt. Kangra, Himachal Pradesh visited Defence Geoinformatics Research Establishment (DGRE), RDC Manali on 25 April 2025. Officers, Inspectors, and OR of NDRF were briefed about hazards associated with snow, dangers of avalanches, snow-meteorological data instruments and their operational working, AWS and data transmission for avalanche forecasting. They were also detailed about various avalanche safety-rescue procedures.

Visit of Team of 14th Bn NDRF, Distt. Kangra, at DGRE, Chandigarh

DMRL, Hyderabad

❑ On April 1, 2025, the Defence Metallurgical Research Laboratory (DMRL), Hyderabad, hosted an industrial visit for 10 Air Technical Officers, accompanied by one Directing Staff from the Naval Institute of Aeronautical Technology (NIAT), Naval Base, Kochi.

The visit began with an introductory video that showcased DMRL's journey, research focus, and significant technological achievements. Dr Ashish Pathak, Sc 'E', addressed the gathering, emphasizing the laboratory's key accomplishments and the critical role of collaboration between research institutes and the Tri-Services in advancing defence technologies.

During their visit, the officers engaged in insightful discussions with DMRL scientists, showing keen interest in the laboratory's cutting-edge research, products, and technologies.

Air Technical Officers from Naval Institute of Aeronautical Technology, Naval Base, Kochi, during their visit at DMRL, Hyderabad

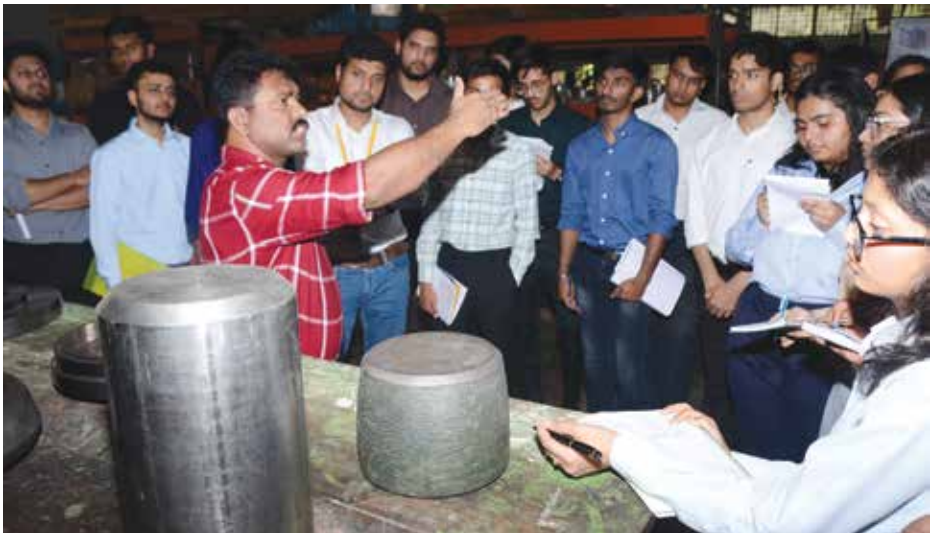
The visit served as an invaluable learning experience, providing the officers with firsthand exposure to the latest technological advancements in metallurgical research, and equipping them with key insights into DMRL's extensive research efforts that support and augment the nation's defence capabilities.

❑ On April 2, 2025, Defence Metallurgical Research Laboratory (DMRL), Hyderabad, hosted an engaging industrial visit for 52 students, along with four faculty members, from the University of Petroleum and Energy Studies (UPES), Dehradun.

Dr Sarabjit Singh, Sc 'F', Head Technical Co-ordination Group, addressed the group, providing an overview of DMRL's key achievements and underscoring the importance of ongoing research.

During the visit, the students

explored several key technical groups. They gained hands-on exposure to DMRL's cutting-edge research infrastructure and ongoing technological developments. Engaging in interactive discussions with DMRL's team of scientists, the students demonstrated a strong interest in the laboratory's pioneering research, products, and technologies. Both students and faculty members expressed their admiration for DMRL's contributions to advancing materials crucial for defence applications.



Industrial Visit of students of University of Petroleum and Energy Studies, Dehradun at DMRL, Hyderabad

DMSRDE, Kanpur

❑ Shri Radha Mohan Singh, Hon'ble MP & Chairperson, Parliamentary Standing Committee on Defence visited Defence Materials and Stores Research & Development Establishment (DMSRDE), Kanpur on 22 April 2025. Dr Mayank Dwivedi, OS & Director, DMSRDE welcomed the dignitary and briefed him about laboratory's vision, mission, charter and technology focus areas. He paid homage to Dr APJ Abdul Kalam statue at the DMSRDE Main gate.

Shri Radha Mohan Singh, Hon'ble MP along with Director DMSRDE and senior scientists at DMSRDE, Kanpur

❑ Shri Ravinesh Kumar, IDAS, PCDA (R&D) visited Defence Materials and Stores Research & Development Establishment (DMSRDE), Kanpur on 22 April 2025. There was a briefing about ongoing research activities of DMSRDE by Dr Mayank Dwivedi, OS & Director, DMSRDE followed by discussion and demonstration of products and technologies developed by DMSRDE in the area of ceramics, ceramics matrix composites

Dr Mayank Dwivedi felicitating Shri Ravinesh Kumar at DMSRDE, Kanpur

(CMCs), stealth and camouflage materials, nanomaterials, coatings, polymers, rubbers, textiles, fuels, fluids, lubricants, and personal protection systems.

DTTC,Lucknow

On 20 March 2025, a delegation of forty-five postgraduate scholars and faculty members from Babasaheb Bhimrao Ambedkar University (BBAU), Central University, Lucknow, undertook an industrial visit to Defence Technology & Test Centre (DTTC), Lucknow. The visit aimed to provide insights into advancements in defence technology and the role of DTTC in fostering technology-driven startups in the sector.The delegation was addressed by Dr Ashish Dubey, Sc 'F' & Project Director and Shri Amit Kumar, Sc 'F', about the opportunities available in the defence technology sector and elaborated on the significant contributions made by DTTC in nurturing startups and innovation in this domain. The group was given an extensive tour of DTTC's cutting-edge research facilities, including the MeDS Laboratory, EDS Laboratory, MDS Laboratory, and CT Laboratory, equipped with state-of-the-art technologies in Modelling and Simulation.

In addition, the delegation also visited the Incubation & Industrial Support building at DTTC, Nadarganj campus. This facility plays a crucial role in supporting manufacturing, prototyping, and industrial collaboration for defence-related projects.

Delegation of Babasaheb Bhimrao Ambedkar University, Lucknow, during their visit at DTTC, Lucknow

IRDE, Dehradun

Dr Samir V Kamat, Secretary Department of Defence R&D & Chairman, DRDO visited Instruments Research & Development Establishment (IRDE) on 7 May 2025. He was welcomed by Dr BK Das, DS & DG (ECS) and Dr Ajay Kumar, OS & Director IRDE. Dr Ajay Kumar presented major R&D initiatives taken by IRDE and technologies developed at IRDE towards Atmanirbhar Bharat. He also briefed about various products which have been developed and inducted into the Services. Dr Ajay Kumar also presented future technologies and systems in which IRDE is spearheading the development work. Dr Kamat appreciated the efforts of IRDE in developing state-of-the-art systems.

A guided tour was conducted to IRDE Diamond Jubilee Gallery. Dr Ajay Kumar explained Dr Kamat in detail about the features of Gallery and showed

Dr Samir V Kamat engaging with the cutting-edge products showcased by IRDE, Dehradun

the Technology Area which displays all technology verticals along with future roadmap and systems. Dr Ajay Kumar also explained about the System Area where all the products of yesteryears have been displayed. Dr Kamat was overwhelmed watching the Down-the-Memory Lane in which the memory is preserved, the product display of yesteryears, display of all technology verticals along with future roadmap and systems in place. He also saw the 'Lab WOW Moments' and 'Wall of Honour in the Gallery. He was extremely happy with the products and systems being developed by the laboratory.

SSPL, Delhi

Parliamentary Standing Committee on Defence (SCOD) visited Solid State Physics Laboratory (SSPL), Delhi, on 12 April 2025. The delegation headed by Mr Radha Mohan Singh, MP & Chairperson, SCOD, was warmly welcomed by Dr Samir V Kamat, Secretary DD R&D & Chairman DRDO; Ms Suma Varughese; DS & DG MCC; and Dr Meena Mishra, OS & Director, SSPL. The delegation was showcased the products and technologies in areas like sensors, SWIR, MWIR, SiC wafers, and GaN RF MMICs.

The exhibition also highlighted decade wise growth of SSPL. The delegation expressed their appreciation for SSPL's efforts in indegenizing high end semiconductor technologies in the country. They acknowledged laboratory's significant contributions and assured full government support for future endeavours.

Parliamentary Standing Committee on Defence inaugurating the exhibition of products and technologies at SSPL, Delhi

NMRL, Ambernath

RAdm Chetan Chandegave, Flag Officer Submarines, Indian Navy, visited Naval Materials Research Laboratory (NMRL), Ambernath, on 6 May 2024. Dr Suman Roy Choudhury, OS & Director, NMRL welcomed RAdm Chandegave. The purpose of the visit was to deliberate on the infrastructure requirements at various Naval Dockyards across the country to support the induction and sustainment of Project-75 submarines equipped with the NMRL-developed Air Independent Propulsion (AIP) system. As part of the visit, RAdm Chandegave visited the Land-Based Prototype (LBP) site of the AIP system, gaining insights into its operational capabilities and the technological advancements achieved by NMRL in enhancing underwater endurance of conventional submarines.

RAdm Chetan Chandegave during his visit at NMRL, Ambernath

VRDE, Ahmednagar

DG (CE) Maj Gen Harpal Singh, VSM and ISWG (CBRN) delegates from E-in-C's Branch, DGMS (CBRN), Indian Navy NBCD School Naval HQrs, Faculty of CBRN Protection, DGQA Pune, MET Branch/2Wg Air HQ, C/o 475 Engr Bde, visited Vehicle Research and Development Establishment (VRDE), Ambernath, on 8 April 2025, to discuss and witness demonstration of various products developed by VRDE in the field of CBRN Recce and Decontamination.

VRDE demonstrated CBRN RV (Tr) Mk-II, CBRN RV(Wh), MPDS, CBRN UGV & RKAD. During the demo, discussions with the scientists involved in the design and development of these systems/products were held. Also, DG(CE) himself drove CBRN RV (Wh) and appreciated the performance of the vehicle.

A detailed presentation was also given highlighting various technologies/systems developed by VRDE. DG (CE) emphasized on need to synergize efforts and enhance co-operation for bringing out products for CBRN preparedness. Shri GRM Rao, OS & Director, VRDE assured that required timely actions as per decisions and directions by DG (CE) will be taken up,to ensure development of quality systems in-line with User requirements.

DG (CE) Maj Gen Harpal Singh taking keen interest in VRDE products during his visit at VRDE, Ahmednagar

Please mail your feedback and suggestions at:
director.desidoc@gov.in; drdonl.desidoc@gov.in;
Contact at: 011-23902403; 23902472; Fax: 011-23819151

Published by DESIDOC, Metcalfe House, Delhi-110 054