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Amrit Mahotsav

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DRDO CELEBRATES NATIONAL TECHNOLOGY DAY-2022

राष्ट्रीय
प्रौद्योगिकी
दिवस
11 मई 2022



राष्ट्रीय प्रौद्योगिकी दिवस समारोह - 2022
एवं
डीआरडीओ पुरस्कारों (2019) का वितरण

मुख्य अतिथि
माननीय रक्षा राज्य मंत्री
श्री अजय भट्ट

विशिष्ट अतिथि
श्री एस सोमनाथ
सचिव, अंतरिक्ष विभाग एवं अध्यक्ष अंतरिक्ष आयोग
डॉ. डी एस कोठारी सभागार, डीआरडीओ भवन, नई दिल्ली

विषय: सुदृढ़ भविष्य हेतु विज्ञान एवं प्रौद्योगिकी में एकीकृत दृष्टिकोण





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DRDO CELEBRATES NATIONAL TECHNOLOGY DAY

On 11 May 1998, India conducted three nuclear tests at the Indian Army's Pokhran Test Range in Rajasthan and successfully entered into the elite group of countries with nuclear weapons. Since then the day 11 May is observed as National Technology Day (NTD) across India to mark the anniversary of the Pokhran Nuclear Tests. The day is celebrated to commemorate the success and achievements of scientists, researchers, engineers and all others involved in the field of S&T. The day reminds Indians about the technological advancements made by the country and the importance of science in daily life.

DRDO celebrated NTD with great zeal and fervor with invited talks and NTD lectures on 11 May 2022. The theme this year was 'Integrated Approach in Science and Technology for Sustainable Future'. Raksha Rajya Mantri Shri Ajay Bhatt graced the occasion as Chief Guest. In his address, Raksha Rajya Mantri called upon the scientific community to make advancements in technologies, such as Artificial Intelligence (AI), so that the nation is prepared to deal with future threats. He said that the government is making all efforts to meet the defence requirements through domestic procurement, exhorting all sectors of the defence ecosystem to work together to achieve excellence in cutting-edge technologies. Shri S Somanath, Secretary, Department of Space & Chairman, ISRO lauded the efforts of DRDO. Dr G Sathesh Reddy, Secretary DDR&D and



Shri Ajay Bhatt releasing the DRDO monograph 'Endeavours in Self-reliance: Defence Research (1983-2018)'

Chairman, DRDO presided over the function. The Raksha Rajya Mantri appreciated DRDO in establishing a self-reliant R&D ecosystem that provides the Armed Forces with state-of-the-art equipment, in line with the Prime Minister Shri Narendra Modi's vision of 'Aatmanirbhar Bharat'.

On the occasion, Shri Ajay Bhatt also released two monographs—'Endeavours in Self-

reliance: Defence Research (1983-2018)' authored Dr KG Narayanan, former Chief Advisor, DRDO, and 'Concepts and Practices for Cyber Security' authored by Dr G Athithan, former Director General, DRDO. A compilation of NTD-2022 orations titled 'Defence Technology Spectrum' was also released on the occasion.

The event also witnessed three orations from DRDO scientists on advanced technologies.



Shri Ajay Bhatt releasing the DRDO monograph 'Concepts and Practices for Cyber Security'

The following laboratories also celebrated NTD-2022 at their respective places.

ADE, BENGALURU

National Technology Day-2022 was celebrated at Aeronautical Development Establishment (ADE), Bengaluru on 11 May 2022. Shri Y Dilip, OS & Director, ADE addressed the gathering. He highlighted the genesis and importance of NTD. Dr Tarun Uppal, Sc 'F' presented the NTD Oration on 'Challenges in Development of Control Laws for the High-speed Expendable Aerial Target'. Shri Dilip commended Dr Tarun Uppal and presented the NTD medal and certificate to him.



DIPR, DELHI

Defence Institute of Psychological Research (DIPR), Delhi celebrated NTD on 11 May 2022. This year's oration was given by Dr Archana, Sc 'F', on 'Psychological Screening Test for Submariners'.



DLRL, HYDERABAD

As a part of the NTD-2022, S&T Forum organised offline

talks on 18 May 2022 at Defence Electronics Research Laboratory (DLRL), Hyderabad on 'RF Decoys for Long Range Strategic Missiles' by Smt Usha P Verma, Sc 'G', Advanced Systems Laboratory (ASL). NTD-2022 oration was given by Shri Anubhav Adak, Sc 'D' on 'Airborne TDoA-DF-based Geolocation of Radars'.



DRL, TEJPUR

Defence Research Laboratory (DRL), Tezpur celebrated NTD-2022 on 11 May 2022 with great enthusiasm. Dr IM Umlong, Sc 'E' delivered NTD oration on 'Decontamination of Flouride from Water'. Dr Umlong was awarded with NTD medal and certificate for his oration.

With an objective to sensitise about DRDO and the importance of S&T, the students from various colleges were invited by DRL Research Scholar Forum (DRSF).



INMAS, DELHI

Dr Rashmi Aggarwal, Sc 'F', delivered NTD oration-2022 on 11 May 2022. The topic of her oration was 'Medical Strategies

for Enhancing Physical and Cognitive Performance of Combat Operators and Civilian Population by Optimising their Vitamin-D Status' at the Institute of Nuclear Medicine and Allied Sciences (INMAS), Delhi.



ITR, CHANDIPUR

Integrated Test Range (ITR), Chandipur celebrated NTD-2022 on 11 May 2022. A total number of three orations were presented during the celebration: 'RF Decoy System for Test and Evaluation of Anti-radiation Missile' by Shri Pravakar Mallick, Sc 'F'; 'A Comparative Analysis of Different Techniques for Flying Object Position Finding using Multiple Electro-optical Tracking System' by Shri Sourav Kaity, Sc 'E'; and 'Multi-sensor Image Fusion for Visible and Infrared Thermal Images' by Shri Amit Kumar Happy, Sc 'D'. The orators were awarded commendation certificates and mementoes.



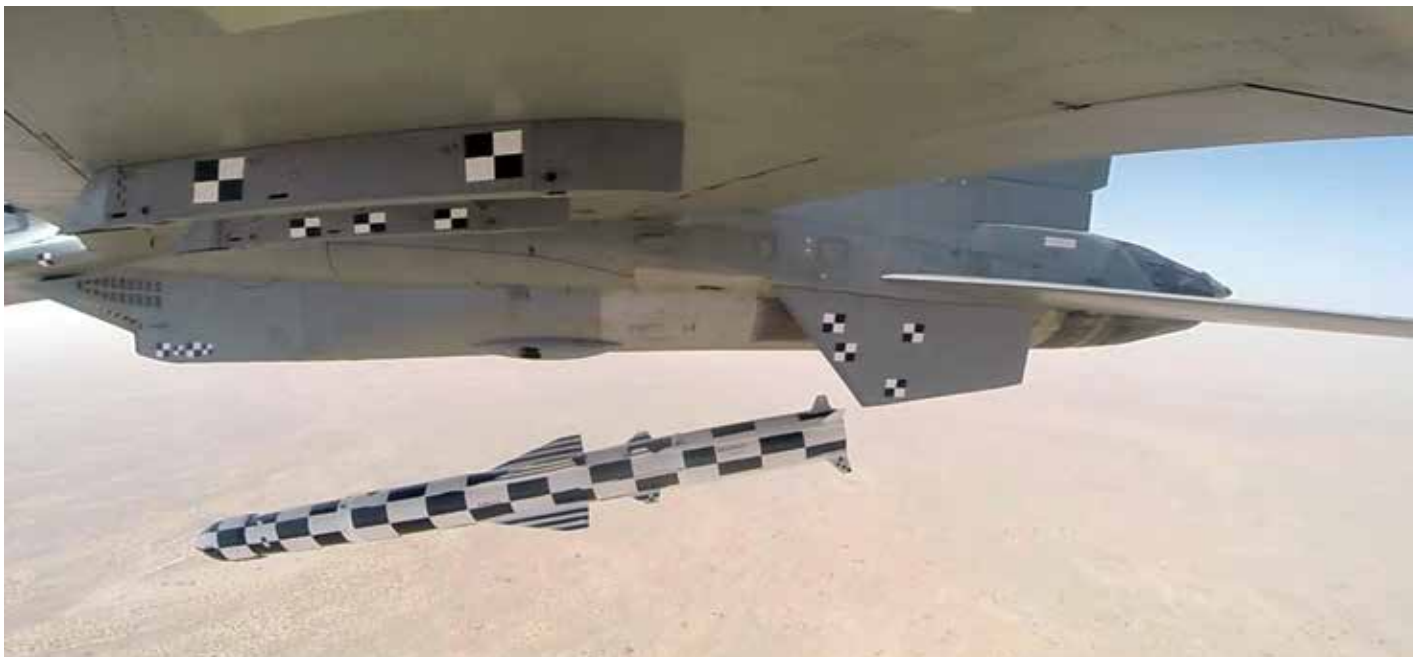
SUCCESSFUL FIRING OF EXTENDED RANGE VERSION OF BRAHMOS AIR LAUNCHED MISSILE FROM SU-30 MKI AIRCRAFT

DRDO successfully fired the extended range version of BrahMos air launched missile from Su-30 MKI fighter aircraft on 12 May 2022. The launch from the aircraft was as planned and the missile achieved a direct hit on the designated target in the Bay of Bengal region.

It was the first launch of extended range version of BrahMos missile from Su-30 MKI aircraft. With this, the IAF has achieved the capability to carry out precision strikes from Su-30 MKI aircraft against a land/sea target over very long ranges. The dedicated and synergetic efforts of the IAF, Indian Navy, DRDO, BrahMos Aerospace Private Limited (BAPL), and Hindustan Aeronautics Limited

(HAL) have proven the capability of the nation to achieve this feat. The extended range capability of the missile coupled with the high

performance of the Su-30 MKI aircraft gives the IAF a strategic reach and allows it to dominate the future battlefields.



DRDO & IN CONDUCTS SUCCESSFUL MAIDEN FLIGHT-TEST OF NAVAL ANTI-SHIP MISSILE

DRDO and Indian Navy (IN) successfully conducted a maiden flight test of an indigenously developed naval anti-ship missile launched from a naval helicopter from Integrated Test Range (ITR), Chandipur off the Coast of Odisha on 18 May 2022. The mission met all its objectives. It is the first indigenous air-launched anti-ship missile system for the IN.

The missile followed the desired sea-skimming trajectory and reached the designated target with a high degree of accuracy, validating the control,

guidance, and mission algorithms. All the subsystems performed satisfactorily. The sensors deployed across the test range and near the impact point tracked the missile trajectory and captured all the events. The missile employed many new technologies, including an indigenously developed launcher for the helicopter. The missile guidance system includes a state-of-the-art navigation system and integrated avionics. The flight test was witnessed by senior officers of DRDO and the IN.

Raksha Mantri Shri Rajnath Singh congratulated DRDO, IN,

and associated teams for the maiden developmental flight test. He said that India has attained a high level of capability in the indigenous design and development of missile systems.

Dr G Satheesh Reddy, Secretary, Department of Defence R&D and Chairman, DRDO appreciated the efforts of the project team for successfully proving mission objectives. He complimented the IN and naval flight test squadron for their support of the project and said that the system will strengthen the offensive capability of IN.



ANDHRA UNIVERSITY INKS MOU WITH DFRL

Andhra University, Visakhapatnam enters into an MoU with Defence Food Research Laboratory (DFRL), Mysuru for the establishment and management of Food Testing Research Laboratory at Andhra University, Visakhapatnam.

Dr Anil Dutt Semwal, Director, DFRL and Shri V Krishnamohan, Registrar, Andhra University signed the MoUs in the presence of Prof. PVGD Prasad Reddy, Andhra University Vice Chancellor at DFRL on 24 March 2022.

DFRL will provide intellectual and technical support needed to train students in food science and related technical fields. Andhra University will assist with technical equipment and setting up of laboratories. Senior scientists from DFRL would be appointed as members of Research Advisory



Committee. Internships would be offered to Andhra University students at DFRL.

Dr R Kumar, Sc 'F', Associate Director, DFRL made a detailed presentation on DFRL R&D

activities. After interaction, Prof. Reddy visited R&D laboratories, testing facilities and showed keen interest on DFRL products and technologies to meet food logistic requirement of Armed Forces.

EVENTS

RAKSHA RAJYA MANTRI GIVES DRDO AWARDS

Raksha Rajya Mantri Shri Ajay Bhatt distributed the DRDO awards for the year 2019 to the scientific fraternity for

displaying outstanding acumen in realising the technological dreams of the nation during the National Technology Day-2022 celebration

in New Delhi on 11 May 2022. The following categories of awards were distributed.

Awards	Awarded to
DRDO Life Time Achievement Award	Shri SK Ray, DS (Retd) & Former Director, RCI, Hyderabad
Technology Leadership Award	Shri MSR Prasad, DS & DG (MSS)
	Dr Vemana Venkateswara Rao, OS, ARDE, Pune
	Dr Manjit Singh, DS & Director, TBRL, Chandigarh
	Dr Tessy Thomas, DS & DG (Aero)
	Shri Pravin Kumar Mehta, DS & DG (ACE)
Scientist of the Year Award	Shri K Ravi Sankar, Sc 'G', CAIR, Bengaluru
	Dr P Srihari, Sc 'G', RCI, Hyderabad



	Dr Manoj Kumar Buragohain, Sc 'G', ASL, Hyderabad
	Shri Pinaki Sen, Sc 'G', DEAL, Dehradun
	Shri M Sheik Althaf, Sc 'G', LRDE, Bengaluru
	Ms Asha Garg, Sc 'G', ADE, Bengaluru
	Dr Ambalal Vinayak Patel, Sc 'G', ADA, Bengaluru
	Shri Ajaz Ahmad Bhat, Sc 'F', DEBEL, Bengaluru
	Dr Puspashree Mishra, Sc 'F', SSPL, Delhi
	Dr Sucheta Chakrabarti, Sc 'G', SAG, Delhi
	Dr AK Gupta, Sc 'G', DRDE, Gwalior
	Dr VV Bhanu Prasad, Sc 'G', DMRL, Hyderabad
	Dr R Seshadri, Sc 'G', MTRDC, Bengaluru
	Shri Jai Prakash Kamal, Sc 'G', TBRL, Chandigarh
	Shri Cotra Srikanth, Sc 'F', ARDE, Pune
	Dr Jaiteerth R Joshi, Sc 'G', DRDL, Hyderabad
Academy Excellence Award	Prof. Yogesh M Joshi, IIT-Kanpur
	Prof. Bhaskar Ramamurthi, Director, IIT-Madras
Popular Science Communication Award	Shri GS Gupta, Sc 'G' & Team, RAC, Delhi
	Shri Pratik C Patel, Sc 'F', ARDE, Pune
Silicon Trophy	Research & Development Establishment Engineers (R&DE (E)), Pune
Titanium Trophy	High Energy Materials Research Laboratory (HEMRL), Pune
DRDO Award for Path Breaking Research/Outstanding Technology Development	Shri U Raja Babu, OS & PD & Team, RCI, Hyderabad
	Shri Benjamin Lionel, OS & Team, IRDE, Dehradun
Agni Award for Excellence in Self-Reliance	Shri PR Arya, Sc 'G' & Team, HEMRL, Pune
	Dr Shweta Rawat, Sc 'E' & Team, DIPAS, Delhi
	Dr Ajit Kumar B Chaudhary, Sc 'G' & Team, DRDL, Hyderabad
	Shri Sanjay Pandav, Sc 'F' & Team, DLRL, Hyderabad
	Shri N Narasimha Murty, Sc 'G' & Team, RCI, Hyderabad
	Shri Manmohan Singh, Sc 'G' & Team, SSPL, Delhi
	Shri Ravindra Kumar, OS & Director & Team, DL Jodhpur
	Dr Narayan Panigrahi, Sc 'G' & Team, CAIR, Bengaluru
DRDO Award for Performance Excellence	Smt Rameetha K, Sc 'G' & Team, NPOL, Kochi
	Shri Akhilesh C Sharma, Sc 'G' & Team, TBRL, Chandigarh
	Shri Anupam Sharma, OS & Team, DLRL, Hyderabad
Special Award for Strategic Contribution	Ms Anu Khosla, OS & Director & Team, SAG, Delhi
	Shri S Ramakrishna, Sc 'G' & Team, VRDE, Ahmednagar
Defence Technology Absorption Award	M/s Integrated Electric Company (P) Ltd., Bengaluru
	M/S Polyhose India Pvt Ltd.
Defence Technology Spin-off Award	Terminal Ballistics Research Laboratory (TBRL), Chandigarh
	Naval Physical and Oceanographic Laboratory (NPOL), Kochi
	Defence Institute of Physiology & Allied Sciences (DIPAS), Delhi
Best Innovation/Futuristic Development	Dr S Ganesan, OS & Team, CVRDE, Chennai







*DRDO Newsletter
congratulates
all the awardees.*

HANDING OVER OF OXYGENATED SHELTER TO ARMY

Fifty men-oxygenated shelters installed at Y junction in the Tawang Sector by Defence Institute of Physiology & Allied Sciences (DIPAS), Delhi, were handed over to Maj Gen Sanjay Sajjanhar, COS HQ 4 Corps on 4 April 2022 by Dr Rajeev Varshney, Director, DIPAS in the presence of Dr SK Sharma, Project Director, Dr DV Kamboj, Director DRL, and Col RK Ranjan, GS EM 4 Corps. The inventory of the shelter was physically handed over to the CO of the concerned unit at the site, Col Aditya Kapoor. The shelter is solar heated, solar-powered, and can be oxygen-enriched depending



upon the requirement. PCM has been used to harness the extra heat during the daytime for keeping the shelter warm during the evening and night. It has been fabricated

based upon the patented design of DIPAS and will be useful for rapid induction of troops to high altitudes and the management of AMS and HAPE.

SHAKTI-DRDO INTERNATIONAL WOMEN'S DAY CELEBRATIONS

International Women's Day (IWD) is an occasion to celebrate the social, cultural, economic, scientific, and political achievements of women across the globe. It is an occasion to focus on unity and equality, as is evident from the theme of the year 'Gender Equality Today, for a Sustainable Tomorrow'. The celebration of women's day for this year by DRDO was themed as SHAKTI—Synergizing Her Achievements Towards Knowledge, Technology, and Innovation. The two-day event was celebrated with full grandeur at Kochi on 13 and 14 April 2022 by Naval Physical & Oceanographic Laboratory (NPOL), Kochi with participants from 52 laboratories





and establishments of DRDO. Chief Guest of the occasion Smt Shoba Koshy, former Chief Post Master General, Kerala Circle & former Chairperson, Kerala State Commission for Protection of Child Rights, congratulated the women scientists and all delegates from DRDO on their achievements and for supporting India's endeavor in achieving self-reliance. Guest of Honour, Dr G Satheesh Reddy, Secretary, DD R&D and Chairman DRDO, during the address to the delegates, stressed the importance and contribution of women in defence R&D and encouraged the participants to fulfill the vision of the Hon'ble Prime Minister of positioning 'Nari Shakti' at the forefront of the development journey of the

nation. Shri S Vijayan Pillai, OS & Director, NPOL and Chairman IWD-2022 delivered the welcome address. Smt M Remadevi, Sc 'G', Convener, IWD-2022 provided an overview of the various events during the two-day celebration. The Chairman, DRDO released a compendium of selected technical articles authored by women scientists of DRDO and presented awards and mementos to the authors of the best papers.

The winner of the IWD logo competition was also honored during the inaugural function. The inaugural function concluded with the ceremonial handing over of the IWD Torch by the Director, NPOL to the representatives from DFRL, Mysure, and the host laboratory for IWD-2023.

The two-day IWD-2022 celebration was marked with varied events, like team building workshop, motivating lectures and cultural potpourri showcasing traditional art form. Lt Cdr Janet Maria Philip of the Indian Navy, Dr Aparna Purushothaman, a teacher and renowned Wildlife Photographer, and Smt Rini Vbin, a prominent Physiotherapist and international certified fitness trainer, shared their experience and motivated the audience to break the barriers and have the courage to enter into less traveled roads. The way ahead on the specific concerns shared by the participants was discussed by a panel of senior officers chaired by Smt Nidhi Bansal, Sc 'G', President, DRDO Women's Forum.

FIRST ANNIVERSARY CELEBRATION OF AKAM

The first anniversary of Azadi ka Amrit Mahotsav (AKAM) was celebrated at Defence Institute of Physiology & Allied Sciences (DIPAS), Delhi on 25 March 2022. The activities of AKAM were initiated at DIPAS on 12 March 2021 to celebrate and commemorate the glorious history of India encompassing its people, culture, and achievements.

During the anniversary celebrations, a sapling distribution ceremony was conducted, in which all the DIPAS members were given plants decorated in tricolor pots by Dr Rajeev Varshney, Director, DIPAS. In his opening address, he apprised the Chief Guest and audience regarding the contributions of DIPAS in the field of military physiology. The laboratory also organised



a lecture by Dr Rajesh Kumar, Associate Professor, Aryabhat College, University of Delhi, Delhi. His lecture invoked the importance of Indian history and emphasised the freedom struggle and highlighted the contributions of renowned freedom fighters.

A movie in Hindi, based on the DIPAS developed products and achievements was released by Dr Rajesh Kumar and was screened during the ceremony. Dr Priyanka Sharma, the nodal officer of AKAM gave a glimpse of the activities conducted by the institute.

DRDE, GWALIOR GOT NABL ACCREDITATION FOR CHEMICAL PERMEATION TEST

Defence Research & Development Establishment (DRDE), Gwalior is the only laboratory in India working on the various aspects of chem-bio threat mitigation technologies. Keeping the objectives of indigenous development, DRDE has been working closely with Indian industries, which gave an aperture to transforming Nuclear, Biological, and Chemical (NBC) defence technologies with the realisation of many products and point of care diagnostics.

Apart from R&D, DRDE also

has the test and evaluation division engaged in the quality control testing of various NBC products (protective gears, chemical detectors, canisters, filters, etc.) against chemical warfare agents as per the applicable standards developed by various DRDO laboratories, Indian industry or procured by Defence Services.

In this context, DRDE has been issued an Accreditation Certificate by NABL for the intended scope. This will not only enhance customer confidence and satisfaction in testing reports issued by DRDE which emphasise

accuracy and reliability but also fetch Indian and overseas defence manufacturers for the quality checks. Additionally, this will provide great support to industries and start-ups engaged in the pursuance of self-reliance in chem-bio defence technologies under the umbrella of Atmanirbhar Bharat.

With this, DRDE will be the first in Asia and second in the world after the US Army Edgewood Chemical Biological Center (ECBC) having the ISO/IEC:17025:2017 accreditation for testing of chemical defence technologies and systems.

DR BR AMBEDKAR'S BIRTH ANNIVERSARY CELEBRATION AT NSTL

In commemoration of Azadi Ka Amrit Mahotsav, Dr BR Ambedkar's 131 Birth Anniversary was celebrated at Naval Science & Technological Laboratory (NSTL), Visakhapatnam on 14 April 2022. Dr SV Kamat, DG (NS & M); Dr Y Sreenivas Rao, Director, NSTL; Prof. Prasada Rao and other dignitaries were present during the occasion. Invited speakers— Prof. S Prasanna Sree gave a talk on 'Preservation of Tribal Culture' and Prof. Dr M Prasada Rao (Retd) explained the greatness of Bharat Ratna Dr Ambedkar. On the occasion, Sri Pathlavath Shankar was felicitated. He won



20 national and 14 international medals in the field of athletics. Sri Amarjeet, Secretary, NSTL SC & ST Employees' Welfare

Association; Sri Hemant Bais, Secretary, Works Committee; and employees of NSTL participated in the celebrations.

HRD ACTIVITIES

COURSE ON ASMAFT-14

Advance Supply Chain Management & Food Technology (ASMAFT-14) course was conducted during 21-23 March 2022 at Defence Food Research Laboratory (DFRL), Mysuru. Twenty-one senior Army ASC officers along with Chief Instructor from ASC Centre and

College, Bengaluru attended the course. Dr Anil Dutt Semwal, Director, DFRL inaugurated the course. The course included state-of-the-art and novel technologies to render comprehensive knowledge to the senior Army officers in food processing, frozen and chilled meat/chicken, quality

control, and management. The course participants visited ITC Foods, Nanjangud, Mysore, the modern dairy plant at Karnataka Milk Federation (KMF), and Analytical Quality Control Laboratory (AQCL), Central Food Technological Research Institute, Mysore.



HR COORDINATORS' MEET

HR Coordinators' Meet is organised every year by Directorate of Human Resource Development (DHRD), DRDO HQ to facilitate better interaction and experience/concern sharing among DRDO HQ and HRD cells of the laboratories and develop HR processes/procedures in DRDO. This year the HR meet was organised at Defence Research and Development Laboratory (DRDL), Hyderabad during 28-29 March 2022. Shri KS Varaprasad, DS & DG (HR) was the Chief Guest of the occasion. The dignitaries included Shri R Appavuraj, Chairman, CEPTAM; Shri Susheel Verma, OS & Director, RAC; Shri Shreedhar



Katti, Sc 'G' & Director, ITM; Dr Alok Jain, Director, CEPTAM; Dr SK Dwivedi, Director, Personnel; and Dr SK Singh, Director, HRD. Major issues deliberated

were training and development programme; performance appraisal and assessment; transfer policies; and ERP Mayurpankh and e-cop system.

INCREON-2022

In-house Course for Retiring Employees of Naval Physical and Oceanographic Laboratory (NPOL) – (INCREON)-2022 was conducted during 16 to 17 March 2022 at NPOL, Kochi. The programme is being organised every year to give expert training to retiring employees to realign themselves to the new life after retirement. The syllabus of the course is prepared in such a way that all the realms of life such as social, psychological, financial, and physical problems of the superannuating individuals are addressed.

The programme included a sessions on handling various aspects of retired life by eminent in the fields. Some of the sessions included socio-psychological aspects of retired life by noted



Psychologist Shri Vipin Roldant; sessions on PPO and pensionary benefits by Shri Mohith S, SAO, NPOL; health and wellness by Dr Priya Vijayakumar, Professor, Amrita Hospital, Kochi; the CGHS and medical reimbursement schemes by Shri Rajesh Nambiar

KM, SAO, NPOL, etc. The final session on experience sharing by Shri Dr Hareesh Kumar PV, Sc 'G' (retired) was interesting and showcased how creative and active a retired person can be, without bothering about old age and seclusion.

TRAINING ON CB WARFARE COUNTERMEASURES TO SPG OFFICERS

As a part of Defence Research & Development Establishment (DRDE), Gwalior's continued efforts to strengthen technical knowledge and hands-on experience on biological and chemical warfare agents and related countermeasures to various forces and security agencies, a five days training course was conducted during 4-8 April 2022 for SPG officers. Altogether 14 participants attended the course. The course was inaugurated by Dr MM Parida, Director, DRDE in the presence of senior scientists and faculty members. The course covered various topics including chemical and biological warfare agents,

their episodes, effects on human, methods of decontamination, possible CB agents of future, responder's responsibility, medical countermeasures, and episode management, etc. The course

contained lectures series followed by demonstration. Dr K Ganesan, Sc 'G' and Officiating Director distributed the certificates. The course was highly appreciated by the participants.



HINDI WORKSHOP AT DRDE

A Hindi workshop on 'Official Language Implementation and Management' was organised at Defence Research and Development Establishment (DRDE), Gwalior on 2 May 2022. Shri Vishnu Chandra Jha, Director DMS, DRDO HQ was invited as the Chief Guest and speaker in the workshop. Shri Jha explained the importance of mother tongue, official language, and national language while highlighting the activities regarding official language implementation at DRDE. Apart from this, he narrated the constitutional provisions about promotion of official language Hindi. In his address, he asked the participants



to adopt five-point formula for effective implementation of official language policy in day-to-day work.

At the end of the workshop,

Dr Manmohan Parida, Director, DRDE honored the Chief Guest with a memento. All the officers and employees of the establishment were present in the workshop.

HINDI SANGOSHTHI-SRISHTI-2022

The All India Joint Official Language S&T Seminar 'Srishti-2022' under South India Cluster was organised during 3-4 March 2022 at Naval Physical and Oceanographic Laboratory (NPOL), Kochi. The seminar was conducted first time under the newly announced South India Cluster by DRDO. DRDO laboratories, viz. Combat Vehicles Research and Development Establishment (CVRDE), Chennai, and Defence Food Research Laboratory (DFRL), Mysuru were the co-conveners of the event. The Chief Guest Dr Tiju Thomas, Indian Revenue Services (IRS), and currently the Commissioner of GST (Audit) for Kerala and Lakshadweep and recipient of Rashtrapati's Ati Vishisht Seva Medal-2019 inaugurated the seminar. Seminar Chief Patron Shri S Vijayan Pillai, Director NPOL; Co-Patrons Shri V Balamurugan, Director, CVRDE;



Chief Guest Dr Tiju Thomas, Indian Revenue Services (IRS), and Shri S Vijayan Pillai, Sc 'H' & Director, NPOL with participants of Hindi Sangoshthi

and Dr AD Semwal, Director, DFRL; Shri PV Jose, AD, NPOL; Shri WK Cherukulath, Sc 'F'; Dr AV Ramesh Kumar, Sc 'F' & Chairman of the seminar; and Shri Ram Lochan Awasthi, Sc 'E' & Head, Hindi Cell along with other delegates were present at the inaugural ceremony. The souvenir of the seminar was also released by the Chief Guest during

the occasion. Shri PV Jose, OS, and Officiating Director, NPOL in his address on behalf of the Chief Patron of the seminar highlighted the importance of Hindi and its day-to-day official uses. During the valedictory ceremony, Dr Ravinder Singh, Director, DPAROM was present as the Special Guest along with the Director, NPOL.

HINDI WORKSHOP AT CABS

Centre for Airborne Systems (CABS), Bengaluru organised a two-day Official Language (OL) Hindi workshop on 29 March 2022 and 31 March 2022. The workshop was inaugurated by Dr K Rajalakshmi Menon, OS & Director, CABS. In her inaugural address, she emphasised the need to enhance the use of Rajbhasha Hindi in the official work.

More than 125 officers and staff were invited to the Hindi workshop. Shri Sushil Kumar Goel, AD (OL), GPO, Bengaluru, and Dr SN Mahesh, Senior Hindi



Shri Sushil Kumar Goel, AD (OL), GPO, Bengaluru and Dr SN Mahesh, Senior Hindi Translator, CAIR, DRDO during the workshop



Translator, Centre for Artificial Intelligence and Robotics (CAIR),

Bengaluru were the Guest Speakers.

WORKSHOP ON MEDICAL MANAGEMENT OF CBRNe CASUALTIES

CBRNe workshop on Medical Management of CBRNe Casualties for Medical Officers of Armed Forces Medical Services (AFMS) and Paramilitary Forces was conducted at Institute of Nuclear Medicine & Allied Sciences (INMAS), Delhi during 18-22 April, 2022. The workshop was jointly organised under the aegis of DCIDS (Med) and INMAS, Delhi.

Total 60 medical officers from AFMS and Paramilitary Forces participated in the workshop-cum-training course. The workshop was aimed to deliberate on the medical management aspects of CBRNe emergencies and impart



the essential domain knowledge and hands on experience to handle such scenarios. INMAS faculties and experts from DRDE, Gwalior; Centre for Land Warfare Studies (CENJOWS); Nordic Bioscience Clinical Development (NBCD);

Centre for Fire, Explosive and Environment Safety (CFEES), Delhi and other institutions covered the theoretical and practical knowledge to each relevant area of CBRN emergency.

WORKSHOP ON PROBLEM SOLVING TECHNIQUES

A workshop on Problem Solving Techniques was organised on 14 and 15 March 2022 at Defence Institute of Psychological Research (DIPR), Delhi by Dr Nity Sharma Sc 'E', Principal Investigator and Dr RK Sokhi, Sc 'G', Project Director and Head of Organisational Behaviour Division (OBD) of DIPR under the guidance of Dr K Ramchandran,

OS & Director, DIPR. The workshop was aimed to validate Problem Solving Approach based Scientists' Selection Methodology to assess behavioral manifestations of psychological attributes of potential candidates. The workshop was attended by senior scientists from various DRDO laboratories, Service officers of Indian Armed Forces who are

technically trained in personality assessment, psychologists of DIPR, and Academicians of Maharaja Agrasen Institute of Technology (MAIT), Delhi. The workshop was widely appreciated and lauded by senior scientists for bringing much needed innovation, more objectivity and focus on psychological attributes in the scientists' selection procedure.



COURSE ON SONAR SYSTEMS

Naval Physical and Oceanographic Laboratory (NPOL), Kochi organised a course on 'Sonar Systems: Theory and Practice' for Sc B's, Sc C's, and for scientists newly joined on transfer. This eight day long course aimed at providing a basic understanding of the important aspects of sonar design and conveying the relevance of the sonar subsystem from a high level and their role in meeting the system objectives. The speakers were eminent scientists from divisions and projects of NPOL. Various topics covered in the course were



interplay of the ocean acoustic medium, passive, and active sonar equations; ocean acoustic environment that influences the

sonar performances; structural and thermal engineering design; electronic subsystems of sonar; front-end electronic receivers, etc.

WORKSHOP ON PANORAMA-II – A MARINE FORECAST VISUALISATION SYSTEM

An information dissemination workshop on Panorama-II was conducted by Naval Research Board (NRB) on 28 March 2022 in Delhi. The workshop was attended by Shri Hari Babu Srivastava, OS & DG (TM), R Admiral KM Ramakrishnan ACNS (CS NCO) and a team of senior naval officers, Col AK Nath (R) DG C-DAC Pune, and a team of an engineer from C-DAC Pune, officials from MeDS, Ministry of Electronics and Information Technology (Meity) and Bhabha Atomic Research Centre (BARC), senior officers of DRDO, and team of NRB.

Panorama-II, a marine forecast visualisation system, has been developed by C-DAC, Pune with funding from NRB and technical guidance of the Indian Navy and



the scientific computing panel of NRB. The Panorama-II was initiated after the successful launch of Panorama ver 1.0 with aim of improving the functionalities of ver 1.0. The Panorama system is deployed in more than 84 IN ships, 7 submarines, and several

naval bases. The improved and advanced version is likely to be deployed in all vessels. The new version is customised to Indian requirements and hosts several unique features in comparison with other commercially available software.

LAB SCIENCE COUNCIL MEETING AT NSTL

In commemoration of Azadi Ka Amrit Mahotsav and as part of moving towards the Atmanirbhar Bharat initiative, Naval Science & Technological Laboratory (NSTL), Visakhapatnam organised its Second Lab Science Council Meeting on 20 April 2022. On the occasion, Sri M Sri Bharat, President, GITAM University was invited as Chief Guest. A talk was given by Sri P Sumanth, Sc 'C', and another talk on 'Data Mining' was given by Dr S Lakshminarayana, Chair, Institute of Electrical and Electronics Engineers (IEEE), Vizag Bay Section.

Chief Guest Sri M Sri Bharat in his address appealed scientist community to come forward to educational institutes and create awareness of the field of research. He requested scientists not to stay



calm while doing their work but to come to schools and colleges for inspiring the student community.

The programme was presided

over by Dr Y Sreenivas Rao, OS & Director NSTL. senior scientists, officers, and staff of NSTL participated in the programme.

XXVII TAMHANKAR MEMORIAL LECTURE

The Tamhankar Memorial Lecture is organised every year by the Indian Institute of Metals (IIM), Hyderabad Chapter to pay tributes to the unique contributions made by Late Dr RV Tamhankar in establishing and nurturing two important institutions in the country, viz. Defence Metallurgical Research Laboratory (DMRL), Hyderabad and Mishra Dhatu Nigam Limited (MIDHANI), Hyderabad. The XXVII Tamhankar Memorial Lecture was organised at DMRL on 11 April 2022. Dr U Kamachi Mudali, Vice-Chancellor, VIT Bhopal University, Madhya Pradesh; Former Chairman & Chief

Executive, Heavy Water Board, and Former President, The Indian Institute of Metals delivered the lecture on 'Materials Security and Strategy for a Sustainable Future'. He emphasised different ideas to

secure materials and a variety of strategies to sustain them, various initiatives introduced by the government, and the importance of the three R's i.e., Reduce, Reuse, and Recycle.



INFRARED STEALTH TEST FACILITY INAUGURATED AT NSTL

Naval Science and Technology Laboratory (NSTL), Visakhapatnam established a new Infra Red (IR) test facility to study performance of diesel engine Infra Red Signature Suppression (IRSS) systems being developed by the laboratory for Indian Navy.

Inaugurating the facility, Dr Y Sreenivas Rao, Director, NSTL appreciated the team for designing and developing a unique facility that can simulate the exhaust gas system of diesel engines of any make thereby avoiding multiple test facilities. Shri PVS Ganesh Kumar, AD, NSTL while briefing about the facility stated that this will be a one stop solution for testing of indigenously developed



IRSS systems for all future ships of Indian Navy and is a major step in achieving 'Atmanir bhārata' in naval stealth. Capt AVSN Murty, Head of IR Department at NSTL

informed that the facility is available to all shipbuilding yards and industries for testing the IRSS systems developed through technology transfer from NSTL.

INAUGURATION OF ADVANCED TESTING LAB AT IRDE

Dr BK Das, OS & Director, Instruments Research & Development Establishment (IRDE), Dehradun inaugurated Advanced Testing Lab for Airborne Systems (ATLAS) at IRDE. This is an excellent facility for the testing of airborne systems. ATLAS is equipped with assembly and integration equipment, an airborne software testing laboratory, and hexapod facilities.

Dr Das lauded the efforts made by the team for establishing the laboratory. Col Rajesh Javeria, Estate Manager, EMU (R&D), Dehradun was also present.



Dr BK Das, OS & Director IRDE along with the team during the inauguration of ATLAS Lab

INAUGURATION OF NORMOBARICHYPOXIA EXPOSURE FACILITY

Defence Institute of Physiology & Allied Sciences (DIPAS), Delhi has created a unique facility of normobaric hypoxia chamber at Bendugi, Bagdogra for Intermittent Hypoxia Exposure (IHE) for 50 persons at a time. The facility has been trial and tested for 12 per cent FIO₂ (fraction of oxygen in inspired air, equivalent to approx. 15000 ft altitude).

The chamber was inaugurated jointly by GOC, 33 Corps, Lt Gen TK Aich, AVSM, and Dr Rajeev Varshney, Director DIPAS in the presence of Programme Director Dr SK Sharma, senior scientists, and army officials.



INAUGURATION OF IRDE DIAMOND JUBILEE GALLERY

Instruments Research & Development Establishment (IRDE), Dehradun established Diamond Jubilee Gallery to signify the Diamond Jubilee of IRDE. The gallery was inaugurated by Dr BK Das, OS & Director, IRDE in the presence of Shri JK Bajpai, OS & Sc 'H' & Associate Director, and Shri Avnish Kumar, Sc 'G' & Additional Director, IRDE. The gallery showcases the products, thermal imagers, laser instruments, vision instruments, fire control, and surveillance equipment, photonics instruments, gimbals, and many more successful products of IRDE.

Down-the-Memory Lane section exhibits the products and events of vintage from 1960



Dr BK Das, OS & Director IRDE during the inauguration of Diamond Jubilee Gallery

to the current year. The gallery has generated huge enthusiasm among employees and families. It is a single-stop solution for

any visitor. Dr Das appreciated the efforts of the officers and staff in the creation of this Diamond Jubilee Gallery.



APPOINTMENT

Director General (ECS)



Dr BK Das, Outstanding Scientist, has been appointed as Director General (Electronics & Communication System) on 29 April 2022. Before this, he was Director, Integrated Test Range (ITR), Chandipur from 2015 to 2020 followed by Director, IRDE. In-between he was Director, DEAL as an additional responsibility.

He was an integral part of the Indian missile programme for 33 years and worked relentlessly towards the testing and evaluation of various state-of-the-art missile systems. He has spearheaded test range and instrumented test range, which is the best and busiest in the world today. He was instrumental in transforming the test range technology for the country to have the entire capability of indigenous test systems. In IRDE, under his leadership, 21 state-of-the-art products could be realised in the year 2021 like electro-optic mast, LEOP, CAMOP, AGMS, and many more systems. During this period, he has created various

infrastructure and state-of-the-art test facilities for electro-optical systems. He has led various projects of national importance in both laboratories and defined the vision for both of these laboratories. Under his dynamic leadership, these two laboratories have set a target for the year 2022 to realise 22 products of international importance.

Dr Das is BTech from Burla Engineering College, Odisha, MTech, and PhD from IIT, Kharagpur. Dr Das is the holder of the Best Graduate Gold Medal and Topper of IIT. His PhD thesis was awarded the best thesis by the USA. He has received several national and international awards, like Lakshmiapat Singhanian-IIM, and Lucknow National Leadership Award as the Young Leader of the country in S&T for the year 2008. (one award for the country); national award by National Research and Development Corporation (NRDC) for the technological development in image processing and electro-optics for 1997-98; Young Engineer National Award and Medallion by Indian National Academy of Engineering (INAE) for contribution in electro-optics and image processing for 1999.

Dr Das was also awarded the Young Scientist Award by Orissa Vigyan Academy for outstanding contributions to image processing.

He is the recipient of the Scientist of the Year Award in 2013 for his outstanding contribution in the field of electro-optics. He received the award for path-breaking research as a member of the team for air defence systems during 2006-07 and the best presentation award during

National Science Day-1996. He is also a recipient of the Lab Scientist of the Year Award, Technology Group Award-2004, and Technology Group Award-2011. Dr Das was also given National Technology Day Titanium Medal for best technology development in the test range in 2004. Dr Das has more than 50 publications in various national and international journals and conferences.

HIGHER QUALIFICATION ACQUIRED

NPOL, Kochi



Shri S Vijayan Pillai, OS & Director, NPOL, Kochi has been conferred with PhD from Cochin University of Science and Technology (CUSAT) under the faculty of Technology for his thesis entitled 'Novel Product Beamforming Design Investigations for Marine Sonar Applications'.

DRL, Tezpur



Shri Dhiraj Dutta, Sc 'D', Defence Research Laboratory (DRL), Tezpur has been awarded the degree of PhD by the National Institute of Technology, Nagaland for his thesis entitled 'Coating Induced Surface Functionalised Hollow Polymethylmethacrylate Microspheres for Development of Technology for Water Purification System'.



AWARDS

CABS, Bengaluru



Dr K Rajalakshmi Menon, OS & Director, Centre for Air Borne systems (CABS), Bengaluru and PgD (AEW&C-Mk-II) was presented with

‘Shrimati Sushma Swaraj Stree Shakti Samman-2022’ award from ‘Rethink India’ on 24 May 2022, during the celebration of International Women’s Peace and Disarmament Day, for rising the ranks and assuming the Directorship of CABS, thereby bolstering the Shree Shakthi Index of Bharat.

BEST PAPER AWARD

The paper entitled ‘Experimental Study on Surface Integrity of Single Crystal Nickel-based Superalloy Under Various Machining Processes’ authored by Mr Nandam Srinivas Rao, Dr A Venugopal Rao, Dr Amol A Gokhale, and Dr Suhas S Joshi, from Defence Metallurgical Research Laboratory (DMRL), Hyderabad has been selected as Best Paper by the organising committee of 8th International and 29th All India Manufacturing Technology, Design, and Research Conference (AIMTDR 2021).

MTRDC, Bengaluru



Dr Latha Christie, Sc ‘G’ and AD, Microwave Tube Research & Development Centre (MTRDC), Bengaluru has received an award

during Federation of Karnataka Chambers of Commerce and Industry (FKCCI) International Women’s Day-2022 celebration at Bengaluru.

RCI, Hyderabad



Shri KVBV Rayudu, Sc ‘G’ Research Centre Imarat (RCI), Hyderabad has been awarded PhD

by Department of ECE, National Institutes of Technology (NIT), Warangal for his thesis titled ‘Some Investigations on Testing and Fault Diagnosis Algorithms for VLSI Circuits’.

NSTL SCIENTIST WON BRONZE MEDAL

In PARA National Table-Tennis Championship-2021

Mr Tanguturi Ramu, Sc ‘D’ Naval Science & Technological Laboratory (NSTL), Visakhapatnam won Bronze Medal in Men’s Singles event in Para Table Tennis National Championship-2021,



organised by Para Table Tennis Promotion Association jointly with Madhya Pradesh (MP) Table Tennis Association under the aegis of Table Tennis Federation of India. He represented Andhra Pradesh in the tournament at Indore, Madhya Pradesh during 27-30 April 2022. He won the Bronze medal in Men’s Singles event under the Class-9 category for the first time in the history of Para Table Tennis of Andhra Pradesh.

With this, he was qualified to participate in International Para Table Tennis tournaments for representing India.

VISITORS TO DRDO LABS

DFRL, MYSURU

* Brig S Bhandari, VSM, BRIG (FI) visited Defence Food Research Laboratory (DFRL), Mysuru on 19 April 2022. Dr R Kumar, Sc 'F', AD, DFRL, made a detailed presentation on DFRL activities. Brig S Bhandari visited the Exhibition Hall, and R&D facilities of DFRL and appreciated the products and technologies developed by DFRL to meet the food logistic requirement of the Armed Forces.

* Maj Gen SS Ahlawat, Additional Directorate General (Supply and Management), DGST, QMG Branch, IHQ (Army) visited DFRL on 8 April 2022. Dr R Kumar, Sc 'F', Associate Director, DFRL, welcomed the Chief Guest and gave a presentation on DFRL R&D products and activities.

DLRL, HYDERABAD

* Rear Admiral R Sreenivas, ADG ACQ – Tech (M&S) visited Defence Electronics Research Laboratory (DLRL), Hyderabad on 18 April 2022. Shri N Srinivas Rao, OS & Director, DLRL gave an overview of DLRL activities and projects. The officer visited Sangam Exhibition Hall, DLRL and was briefed about various products realised by DLRL with models. R. Adm Sreenivas expressed the visit as illuminating and invigorating which made him enlightened on the outstanding work being done by DLRL.

He wished the Director and his enthusiastic team for looking forward to the deployment of many of the products.



Brig S Bhandari, VSM, BRIG (FI) during his visit at DFRL, Mysuru



Maj Gen SS Ahlawat, Additional Directorate General (Supply and Management), DGST, QMG Branch, IHQ (Army) at DFRL, Mysuru



Rear Admiral R Sreenivas, ADG ACQ – TECH (M&S) at Exhibition Hall, DLRL, Hyderabad

* Vice Chief of Air Staff, Air Marshal Sandeep Singh, PVSM, AVSM, VM, and ADC visited DLRL on 20 April 2022. Shri N Srinivas Rao, OS & Director, DLRL, briefed him about the DLRL projects, products, and achievements. The products and technologies realised in various programmes and projects were exhibited during the visit. The vice chief appreciated the great work being done by DLRL for the Defence Forces.

Vice Chief of Air Staff, Air Marshal Sandeep Singh, PVSM, AVSM, VM, and ADC during his visit at DLRL, Hyderabad



NMRL, AMBERNATH

Visit of Parliamentary Standing Committee on Defence

Parliamentary Standing Committee on Defence (SCOD) under the chairmanship of Hon'ble Shri Jual Oram, Member of Parliament, visited Mumbai on 27 April 2022 to review Naval Materials Research Laboratory (NMRL), Ambernath, and Mazagon Dock Shipbuilders Limited (MDL) activities. The visit was jointly organised by MDL and NMRL. Dr Samir V Kamat, DS & DG (NS&M), Shri PT Rojatkar, OS & Director NMRL, Dr Ravindra Singh, Director, DPA, and other senior scientists attended the meeting. Dr Samir V Kamat welcomed all the SCOD members and briefed them about laboratory history, technologies developed, important projects, ToTs, and industry participation in development, production, and



Members of Parliamentary Standing Committee on Defence (SCOD) with Dr Samir V Kamat, Shri PT Rojatkar, Dr Ravindra Singh and other senior officials

plans. A detailed presentation on 'Assessment of Indigenous Defence Production both by way of Public and Private Sector Including Major Research Initiatives' was

delivered by Dr Suman Roy Choudhury, Sc 'G' to SCOD. An exhibition of technologies and products developed by NMRL was also organised.