

# DRDO

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Amrit Mahotsav

NEWSLETTER



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## SUCCESSFUL MAIDEN FLIGHT OF AUTONOMOUS FLYING WING TECHNOLOGY DEMONSTRATOR





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Printing: SK Gupta
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: Dr Jayshree Das, Defence Research Laboratory (DRL)
: Smt Jyotsna Rani, Naval Science & Technological Laboratory (NSTL)



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*director.desidoc@gov.in; drdonl.desidoc@gov.in*  
Contact at: 011-23902403; 23902472; Fax: 011-23819151

# SUCCESSFUL MAIDEN FLIGHT OF AUTONOMOUS FLYING WING TECHNOLOGY DEMONSTRATOR

**D**efence Research and Development Organisation (DRDO) successfully conducted the maiden flight of the Autonomous Flying Wing Technology Demonstrator from the Aeronautical Test Range, Chitradurga, Karnataka on 1 July 2022. While operating in a fully autonomous mode, the aircraft exhibited a perfect flight, including take-off, waypoint navigation, and a smooth touchdown. The flight marked a major milestone in terms of proving critical

technologies for the development of future unmanned aircraft and is a significant step towards self-reliance in such strategic defence technologies.

The Unmanned Aerial Vehicle (UAV) is designed and developed by Aeronautical Development Establishment (ADE), Bengaluru, a premier research laboratory of DRDO. The UAV was powered by a small turbofan engine. The airframe, undercarriage, and entire flight control and avionics

systems used for the aircraft were developed indigenously.

Raksha Mantri Shri Rajnath Singh congratulated DRDO and said it is a major achievement towards autonomous aircraft and will pave the way for 'Aatmanirbhar Bharat' in terms of critical military systems.

Dr G Satheesh Reddy, Secretary, Department of Defence R&D, and Chairman DRDO appreciated the efforts of the teams associated with the design, development, and testing of the system.



## LATOT FOR HURDLE TECHNOLOGY PRESERVED FRUITS

**D**efence Food Research Laboratory (DFRL), Mysuru, signed License Agreement on Technology Transfer (LAToT) for Hurdle Technology Preserved Fruits with M/s Starjaack Pvt Ltd, Kerala. Dr Anil Dutt Semwal, Director, DFRL, and Mr Thankachan Yuhannan, Director, M/s Starjaack Pvt Ltd, Kerala, signed the agreement on 3 June 2022 at DFRL, Mysuru.

The inventors, Dr Om Prakash Chauhan, Head-Fruits and Vegetables Technology Division, Dr Rudragoud Policegoudra, Sc 'E', and their team, Dr R Kumar, Sc 'F', Additional Director, DFRL, and Dr M Pal Murugan Sc 'E', Head-Technology Transfer & Exhibition Division, DFRL



were present during the occasion. Hurdle technology is a novel technique used for the preservation of fruit slices and cutting fruits. The hurdle technology preserved fruits to retain their fresh appeal

as that of fresh fruits. The product remains microbiologically safe and has a high level of acceptance. The process of preparing and processing these fruits is less energy intensive.

## LATOT FOR TRANSFER OF MILK TESTING KIT MARK-II

**D**efence Food Research Laboratory (DFRL), Mysuru, signed LAToT for unique, first-of-its-kind, simple, and cost-effective multiple adulterants (boric acid, detergent, hydrogen peroxide, neutraliser, soap, starch, urea) and microbial quality test-kit for checking the quality of the milk with M/s Beejapuri Dairy Pvt Ltd (Country Delight), Gurgaon. Dr Anil Dutt Semwal, Director, DFRL, and Ms Pooja Gupta, General Manager, Quality Assurance, Beejapuri Dairy Pvt Ltd signed the agreement on 15 June 2022 at DFRL, Mysuru.

The inventors Dr VA Sanjeev Kumar, Sc 'F', Head-Freeze Drying and Animal Products Technology



Division, Dr R Shylaja, Sc 'E', and their team, Dr R Kumar, Sc 'F', Additional Director, DFRL, and Dr M Pal Murugan Sc 'E', Head-Technology Transfer & Exhibition Division, DFRL were present during the occasion. M/s Beejapuri Dairy Pvt Ltd is one of the upcoming largest manufacturers of dairy products,

fruit and vegetable food products. The fraudulent practice of milk adulteration with harmful chemicals is rampant in India, especially during the festive season when its demand is high. DFRL had developed and commercialised a milk test kit Mark-I to identify such fraudulent adulteration in milk.

# INTERNATIONAL YOGA DAY CELEBRATIONS

## CABS, BENGALURU

Centre for Airborne Systems (CABS), Bengaluru celebrated International Yoga Day (IYD)-2022 on 21 June 2022. Shri K Srikumar, Sc 'E', CABS conducted an hour yoga session. All officers and staff participated in the session enthusiastically.



## CAS, HYDERABAD

Centre for Advanced Systems (CAS), Hyderabad celebrated IYD-2022 on 21 June 2022 with great enthusiasm. Shri BV Papa Rao, OS & Director, CAS along with officers and staff of CAS participated in the event. Various asanas were performed and their benefits were explained by the yoga instructor. Director, CAS reiterated the benefits of yoga for the body, mind, and soul and asked employees to inculcate yoga as an indispensable habit in their life. He also emphasised the importance of yoga in relieving stress and maintaining a healthy body.



## CASDIC, BENGALURU

Combat Aircraft Systems Development & Integration Centre (CASDIC), Bengaluru organised Mass Yoga event on 21 June 2022 to celebrate 8<sup>th</sup> IYD. Centre Head, CASDIC addressed the gathering by highlighting the importance and benefits of yoga and urged the participants to make yoga practice part of their daily life to keep themselves healthy.

Ms Gayathri Devi, professional yoga teacher conducted the yoga session. She elaborated on various aspects of yoga and advised to adopt yoga to maintain a healthy lifestyle.



## DGRE, CHANDIGARH

Defence Geoinformatics Research Establishment (DGRE), Chandigarh celebrated yoga utsav in June 2022 as part of a five-day countdown to IYD-2022 at DGRE, Chandigarh, RDC, DGRE, Manali, DGRE MMC Sasoma, and DGRE MMC Srinagar. Dr PK Satyawali, Director, DGRE performed yoga and emphasised that the essence of yoga is a journey of the self, through the self, to the self. Dr Amod Kumar, Associate Director, DGRE Chaired DGRE yoga utsav during 17-21 June 2022 at DGRE

and DGRE's stations with the theme of the year 2022 "Yoga For Humanity" and emphasized yoga requirement for physical, mental, and spiritual growth and upliftment. The yoga Utsav was organised as per the yoga protocol notified by the AYUSH Ministry, Govt of India. During the Utsav, along with the DGRE fraternity various school children, ex-servicemen and young monks also participated in the celebration.



## DRL, TEZPUR

Defence Research Laboratory (DRL), Tezpur, Assam celebrated the IYD-2022 on 21 June 2022. The programme was inaugurated by Dr Rama Dubey, Sc 'F', Officiating Director. She delivered the welcome address highlighting the importance of yoga in our daily life followed by felicitation of the yoga instructors. Mrs Smita Vyash, Vivekananda Kendra, Tezpur conducted the Yoga session. The members of the DRL family participated in the event with full zeal and enthusiasm.



## ITR, CHANDIPUR

Eighth IYD-2022 was celebrated at Integrated Test Range (ITR), Chandipur on 21 June 2022. Shri HK Ratha, Director, ITR inaugurated the programme. Director in his inaugural speech highlighted the importance and need of yoga for humanity in day-to-day life. Guru Gouranga Acharya delivered a lecture on yoga and its effects on the human body and soul. He also showcased Yogasanas which were practiced by ITR personnel. Many officers and staff attended the programme.



## NPOL, KOCHI

Naval Physical and Oceanographic Laboratory (NPOL), Kochi celebrated IYD-2022 on 21 June 2022 by organising various programmes to highlight the significance of yoga for a healthy and happy life. Dr K Ajith Kumar, Sc 'G' & Director, NPOL noted that yoga

is one of the most significant contributions of India to humanity and it is important to practice yoga on daily basis. It brings a strong sense of discipline into our lives. Shri GB Dinachandran, President, Patanjali Yoga Training Centre, Ernakulam explained the origin of the science of yoga, thousands of years ago. Quoting from the scriptures he explained the benefits of yoga in achieving the perfect harmony between the mind and body. A demonstration session by NPOL employees was also organised. The audience participated in the short yoga session led by Shri Dinachandran.



## NSTL, VISAKHAPATNAM

As part of Azadi Ki Amrit Mahotsav, Naval Science & Technological Laboratory, NSTL, Visakhapatnam celebrated IYD on 21 June 2022. Shri A Visweswara Rao, Senior Security Assistant

and trained yoga instructor gave brief introduction about the yoga and its benefits. Yoga practice, meditation, and various asana were practiced under guidance of experienced practitioners. Programme was conducted in two sessions. Morning session was conducted with officers and staff from NSTL, and family members from NSTL Fraternity. Dr Y Srinivasa Rao, Director, NSTL along with 50 members actively participated and performed common yoga protocol. A lecture was also conducted on 'Healthy Mind for Healthy Nation' by Swami Maharaj Bodhamayanandha, a monk from Ramakrishna Mutt and Ramakrishna Mission.

He blessed the NSTL fraternity and delivered a very enlightening speech on 'Healthy Mind for Healthy Nation' and interacted with the participants and explained various physical, mental, and spiritual aspects of yoga and day-to-day activities life.



# CAS CELEBRATED ANNUAL DAY

Centre for Advanced Systems (CAS), Hyderabad celebrated its 8<sup>th</sup> Annual Day on 11 June 2022 with immense zeal and enthusiasm. Dr G Satheesh Reddy, Secretary Department of Defence R&D and Chairman DRDO graced the

occasion as the Chief Guest, and Dr BHVS Murthy, DS & DG (MSS) was the Guest of Honour. Various laboratory Directors and ex-scientist of CAS attended the event. As a part of the celebrations, Dr Reddy inaugurated Residential Quarters built for CAS employees

Shri BV Papa Rao, OS & Director, CAS welcomed the august gathering and briefed them about the progress made in different projects such as the Agni missile, integration and testing facilities, and other achievements of CAS. Shri BV Rao, Sc 'G' presented

CAS Annual Management Service Report. Dr Reddy in his address lauded the progress made by CAS on strategic missile integration and testing and Hypersonic Wind Tunnel (HWT) facilities. Dr Murthy also appreciated the achievements of CAS in various Agni missile projects. Both dignitaries insisted on acquiring additional 1000 acres of land from state authorities for future

expansion of the laboratory. DRDO lab-level awards and cash awards were presented to awardees by the Chief Guest who appreciated their hard work and dedication in their respective field of work. Mementos were distributed to employees who completed 20/25/30 years of service in DRDO. Eight eminent scientists from Missile Complex were felicitated by the Chairman, DRDO as a mark of respect and

gratitude for their contributions. Prizes for various sports activities were also given by the Director, CAS a day before the event of Raising Day. The culmination of the event was marked by various cultural activities. Shri Sandip Chattopadhyay, Sc 'G' presented the salient features of the HWT facility which has been established at CAS, and presented the vote of thanks.



## CELEBRATION OF WORLD ENVIRONMENT DAY

A plantation programme was conducted to mark the celebration of World Environment Day-2022 on the theme 'Only One Earth: Care and Conserve'. Shri HK Ratha, Director, ITR inaugurated the programme with a plantation of coconut saplings. More than 50 saplings of different types of fruit-bearing trees were planted. Team,

ITR has always been proactive towards the protection of the environment and cleanliness of the surrounding. Initiatives had been taken by ITR to ensure a clean and healthy environment.

The programme was conducted at Island Complex, LC-IV, Dhamra by Dr SK Sahu, Sc 'F', GD (FI&ES), and his team.



## TRAINING SESSION ON E-RESOURCES & E-LIBRARY

Defence Information & Documentation Centre (DESIDOC), Delhi organised a short-term training session on 'Maximising Usage of e-resources using DRDO e-library and Writing High-Quality Research Paper' on 19 July 2022. The objective of the session was to create awareness about the e-resources subscribed by DESIDOC for DRDO scientific community and also how DRDO scientists may write good quality research papers at the national and international levels.

The session was attended by 58 participants from DESIDOC, Centre for Fire, Explosive and Environment Safety (CFEES), Aero R&D Board, Life Science Research Board, Institute of Nuclear Medicine & Allied Sciences (INMAS), Defence Institute of Psychological Research (DIPR), Scientific Analysis Group (SAG), Institute for Systems Studies & Analyses (ISSA), and DG-MEDCoS. Scientists, officers, staff, and library professionals participated in the session.

Shri R Appavuraj, Chairman, CEPTAM, graced the occasion as the Chief Guest. In his keynote address, he focused on deep thinking and how to search and read maximum books. Dr K Nageswara Rao, Director, DESIDOC in his address emphasised on utilisation of e-resources and services provided by DESIDOC to the DRDO scientific community.

Smt Kavita Narwal, Sc 'E' gave a presentation on DRDO e-resources subscribed by DESIDOC, its history, and how a laboratory may become a part of

the consortium. Mr Mohit from M/s Refread covered a live demo of the DRDO e-library platform for maximising the usage of e-resources subscribed by DRDO laboratories.

Shri Yogesh Modi, Sc 'E' and Smt Dipti Arora, TO 'B' talked about various publications of DESIDOC, their status, and how the author may submit the manuscript/materials. Dr Vinita Saroha from M/s Elsevier talked about 'How to Publish High-Quality Research Papers using Scopus, Science Direct, and Mendeley'.



## COURSE ON FUTURE TRENDS IN TARGETS FOR TEST AND EVALUATION

Continuing Education Programme (CEP) course on 'Future Trends in Targets for Test and Evaluation' was organised at Integrated Test Range (ITR), Chandipur, during

12-14 July 2022. Shri HK Ratha, Director, ITR inaugurated the course. During his inaugural address, he emphasised the importance of various types of targets during the test and

evaluation process in ITR and their future trends. The course was organised to highlight various types of targets which are being used presently at ITR as well as required for future applications.

Various topics like 'Present and future target requirements for test and evaluation of tactical ballistic missiles', 'flight profile and flight configuration planning for aerial targets', 'performance evaluation of indigenous passive surface targets', 'design and development of passive RF surface targets', 'design and development of expendable aerial targets', 'design and development of indigenous supersonic expendable aerial targets', 'miss distance indication', 'design and development of S band active surface targets', etc., were covered during the course. The course was organised by Shri MK Pal, Sc 'F', and his team.



## HINDI WORKSHOP AT GTRE

In compliance of the Annual Programme for the financial year 2022-23, Gas Turbine Research Establishment (GTRE), Bengaluru organised its first Hindi Workshop on 27 June 2022 for the senior scientists of the laboratory. The programme auspiciously began with the recitation of shloka on Goddess Saraswati. Shri Ashok Kumar Billure, retired Joint Director from Dept. of Space was invited as the Guest Speaker who delivered a talk on 'Efficient Management in Rajbhasha Implementation' and shared his vast experience and knowledge to all the participants. Shri MZ Siddique, DS and Director, GTRE encouraged the participants with his presence and instructed all the participants to make use of the knowledge obtained in the workshop in implementing Hindi effectively in their concerned groups.

'Kushal Prabandhan ke Sootra', a motivational book by Shri Suresh Kant was distributed to all the participants in the form of course material. Under the guidance and leadership of Dr Rajiv Jain,

Sc 'G' Technical Director, Hindi Section and in the coordination of Shri Hem Kapil, Sc 'F' & Vice-Chairman, OLIC, the workshop was organised successfully.



## HINDI WORKSHOP AT ITR

A Hindi workshop was organised in Integrated Test Range (ITR), Chandipur during 29-30 June 2022 for DRTC officers and staffs, admin & allied cadre officers and staffs. Shri HK Ratha, Director, ITR inaugurated the workshop. In his inaugural address he highlighted the importance of Official Language (OL) Hindi and emphasised on its use in official activities. He informed that the progress of OL Hindi is increasing well and we should be a part of it. The participants of the workshop were taught to eradicate and remove the difficulties, hesitations in use of OL Hindi. OL Policy of



the Union was also explained to them. The lectures were delivered by Shri Loknath Tiwari, Manager (OL), Currency Note Press, Nashik, Shri SK Roy, AD (OL) Retd. PXE,

Shri Dibakar Jena, JTO. About 40 participants participated in the Workshop. Shri PN Panda, Sc 'F', Associate Group Director (HR) and his team organised the programme.

## WORKSHOP ON HUMAN FACTOR INTEGRATION FOR DEFENCE EQUIPMENT

A workshop on Human Factor Integration for Defence Equipment was organised by the Defence Institute of Physiology & Allied Sciences (DIPAS), Delhi on 29 June 2022 in collaboration with the Directorate of Quality Reliability and Safety (DQR&S) and Defence Institute of Psychological Research (DIPR). The workshop addressed the international status and procedure for implementation of HFI in DRDO-developed products.

The workshop was inaugurated in presence of Dr Rajeev Varshney, Director, DIPAS, Rear Admiral Ranjit Singh, Director DQR&S, and



Dr K Ramachandran, Director, DIPR with the participation of

16 delegates from various DRDO clusters.

## S&T TALK AT DLRL, HYDERABAD

Science & Technology Forum, Defence Electronics Research Laboratory (DLRL), Hyderabad organised a technical talk by Prof. (Dr) K Lalkishore, Ex Registrar, JNTUH and Former VC, JNTUA, and Lt. Col. Karun Modi, SSO, DLRL on 28 June 2022.

At the onset, Smt Lakshmi, Sc 'F', Chairperson gave a report on the S&T forum activities. Guest Prof. (Dr) K Lalkishore, spoke on 'New Devices (FPGAs, RF\_SOC, etc.) based on Composite Material and Nano Technology'. He spoke about what are new devices made based on composite material and nano Technology and how one can use them in defence technologies.

Lt. Col. Karun Modi spoke on the topic of 'Security Protocols to be followed in DLRL'. He spoke about the insight of security threats by social networking sites and their security measures. He



spoke about, in the present day how social networking sites are omnipresent and pose a serious threat to information security. He told about social engineering and the different vulnerabilities of social network sites. He said about being a defence person

and what are the responsibilities of individuals, their dependents, and the do's and don'ts of social networking sites.

The talks were followed by a Q&A session, and the programme concluded with a vote of thanks by Member Secretary, S&T Forum.

## TRAINING PROGRAMME ON RECORDS MANAGEMENT

A two-day training programme on 'Records Management' for East Zone was conducted at Proof and Experimental Establishment (PXE), Chandipur on 27-28 June 2022. The course was designed and organised by the Directorate of Parliamentary Affairs, Rajbhasha and Organisation & Methods (DPARO&M), DRDO HQ, and PXE Chandipur.

The programme was formally inaugurated by Shri DK Joshi, Director, PXE in the presence of Smt Asha Tripathi, Sc 'G', DPARO&M & Course Director,



Dr PK Das Gupta, Sc 'G', PXE, Shri Anjan Saha, Sc 'E', and Course Coordinator. Smt Asha Tripathi, Sc 'G', gave an introductory talk on 'an overview of organisation and Methods adopted in DRDO' followed by a presentation on the importance of records

management and its guidelines and Precedent book. Faculties from DPARO&M, i.e., Shri CP Meena, Sc 'E', Shri Manoj K Shakya, TO 'C', and Smt Chanda Anand, AO gave presentations on various aspects of records management, viz. RRS and Records Management

Policy-2021, Management of Classified Records, Conservation of Records, Govt. Initiative on Increasing Efficiency in Govt. Offices, Introduction to Central Secretariat Manual of Office Procedures (CSMOP) and Layout & Setting up of Records Room.

## COURSE ON RUBBER AND COMPOSITE TECHNOLOGY FOR MARINE APPLICATION

Naval Physical and Oceanographic Laboratory (NPOL), Kochi conducted a Continuing Education Programme (CEP) on 'Rubber and Composite Technology for Marine Application' during 13-17 June 2022. The purpose of the programme was to bring together scientists from DRDO laboratories, experts from academia, and industries to present the basics as well as leading-edge research on the advancement of rubber and composites with emphasis on the usage of these materials in marine applications. Dr K Ajith Kumar, Sc 'G' & Director, NPOL inaugurated the course. The keynote address was delivered by Dr M Patri, former Director, NMRL, and Dr Raja Ramanna, DRDO Distinguished Fellow on 'Role of Rubber and Composite for Naval Applications', which



was followed by a plenary talk on 'Vibration Isolation in Naval Systems' by Dr Ganesh Kumar, OS, NSTL. There were 35 participants from various DRDO laboratories including three officers from the Indian Navy.

The programme provided an interactive forum for all the participants to share, explore, and discuss concepts and issues related

to the application of rubber and composite materials for marine applications. The course provided comprehensive coverage of the topic and gave a good insight into the selection and effective utilisation of rubber and polymer composite-based products for underwater applications. Dr P Annadurai, Sc 'F' was the Course Director.

## COURSE ON CONTROL & GUIDANCE FOR UNDERWATER VEHICLE

As part of Azadi Ki Amrit Mahotsav, Naval Science & Technological Laboratory

(NSTL), Visakhapatnam organised a CEP course on 'Control & Guidance for Underwater

Vehicles' from 30 May to 3 June 2022. The objective of the course was to educate and enhance the

design skills of the participants with advanced trends in control and guidance techniques, hands-on lab sessions on control design, lead lectures, applications, and case studies. A total of 38 members participated in the course from various DRDO laboratories and Naval HQrs. The course broadly covered control and guidance strategies for underwater vehicles, space transportation systems, motion planning for underwater vehicles, hydrodynamics and autonomous underwater vehicles, inertial navigation systems and actuators, intelligent adaptive control, estimation and guidance, advances in missile technology, and autopilot design, challenges in flight control design and testing, algorithms of autonomous driving in an automotive and hands-on session on control applications.



The lectures were given by eminent and experienced speakers from academic institutions (IISc-Bangalore, IIT-Mumbai), DRDO laboratories (CAIR, DRDL, NSTL, and RCI), ISRO, and industry. Sri PVV Ram Mohan Rao, Sc 'F' was the Course Director, and

Sri Boni Ramesh Babu, Sc 'E' was the Course Coordinator.

The course was conducted under the guidance of Dr Y Sreenivas Rao, OS & Director, NSTL, and Sri BVSS Krishna Kumar, OS and Associate Director, NSTL, Visakhapatnam.

## COURSE ON QUALITY & RELIABILITY ENGINEERING

Naval Science & Technological Laboratory (NSTL), Visakhapatnam conducted a course on 'Quality & Reliability Engineering' during 4-8 July 2022. Sri PVS Ganesh Kumar, OS & Guest of Honour said that nowadays, a lot of awareness of quality and reliability is there in the NSTL fraternity, as they are the essential elements in any project. Dr SV Kamat, DS & DG (NS&M), Chief Guest in his address emphasised that DRDO is making all efforts to nurture quality and reliability in all phases of a product from design to development, to produce reliable products for the Services. He also said that DRDO has become high quality and reliability conscious organisation by making

documentation compulsory at every stage of the product life cycle. On the occasion, Dr Kamat unveiled the 'ISO 9001:2015 Certificate' that was given by Bureau Veritas to NSTL and handed over to Sri PVS Ganesh Kumar, and the other dignitaries accompanied. A Keynote address was given by Rear Admiral Ranjit Singh, Director, DQRS, DRDO HQs, New Delhi, and Shri CVS Sai Prasad, Sc 'G' and Director QRS, DG (Missiles and Strategic Systems), Hyderabad.

Commodore D Chandrasekhar, Technology Director (QRS), & Course Director, and Shri T Venugopala Rao, Sc 'E', & Deputy Course Director with all committee members organised the course. All scientists, officers, members of

the NSTL civil employees union and works committee, and staff of NSTL participated in the inaugural programme.





**Higher Qualification Acquired**

**ASL, Hyderabad**



Shri Shankar Gowri, Sc 'F', Advanced Systems Laboratory (ASL), Hyderabad completed PhD from Indian Institute of Technology (ISM) Dhanbad, Jharkhand, for his thesis entitled 'Structural Integrity Assessment of Maraging Steel 250 Pressure Vessel Weld Joints Through Acoustic Emission Studies'.

**CASDIC, Bengaluru**



Smt Josephine Nirmala, Technical Officer 'B', Combat Aircraft Systems Development & Integration Centre (CASDIC), Bengaluru has been awarded PhD by Bharathiar University, Coimbatore for her thesis entitled 'Information Seeking Behaviour of DRDO Scientists in Karnataka: A Study'.

**NMRL, Ambernath International Best Paper Research Award-2022**

Dr G Gunasekaran, Sc 'F' and Dr Ganesh S Dhole, Sc 'D', Naval Materials Research Laboratory (NMRL), Ambernath received International Best Paper Research Award-2022 in recognition of their remarkable and outstanding contribution in the field of coating for devoting their talent, efforts, and performance to develop a Fluorescence-based Corrosion Detecting Epoxy Coating for Marine Application.

**VISITS**

**VISITORS TO DRDO LABS**

**DIPR, DELHI**

Lt Gen NS Sarna, SM, VSM (Director General Recruiting) visited DIPR on 7 July 2022. On his maiden visit to the laboratory Dr K Ramachandran, OS & Director Defence Institute of Psychological Research (DIPR) briefed the research work and assignments being carried out by the institute and overviewed Cognitive Battery for Officers Selection (CBOS) and witnessed the Strategic Behaviour Analysis Laboratory. He appreciated the work being under taken in DIPR and looked forward for more association.



Lt. Gen. NS Sarna with Director DIPR and other Senior Scientists

**DGRE, CHANDIGARH**

Shri Ram Nath Kovind, Hon'ble President of India visited Lahaul Valley, Himachal Pradesh in June 2022. Hon'ble President was on his official tour and visited strategically important Atal tunnel in which Defence Geoinformatics



Hon'ble President of India with Dr PK Satyawali, Director, DGRE and Dr PK Mehta DS & DG (ACE), Pune at RDC Manali

Research Establishment (DGRE)'s, Chandigarh contributed to provide all-weather connectivity for Manali to Ladakh Axis. At DGRE, on 11 June 2022, the President received warm welcome by Dr PK Mehta, DS & DG (ACE), Pune and Dr PK Satyawali, Director, DGRE. Hon'ble President was accompanied by Shri Rajendra Vishwanath Arlekar, Governor of Himachal Pradesh, Shri Jai Ram Thakur, Chief Minister (HP) and Shri Ram Lal Markanda, Cabinet Minister, and other dignitaries.

### DRL, TEZPUR

Brig. Ajay Kumar, Brig RVS, HQ Eastern Command visited Defence Research Laboratory (DRL), Tezpur on 1 July 2022. Dr Dev Vrat Kamboj, Director, DRL, briefed him about various R&D activities of the laboratory, primarily to enhance operational efficiency of troops in remote border areas of North-East India. Brig. Ajay Kumar appreciated the efforts undertaken by the laboratory for improving and promoting the wellbeing of the troops in the border and forward areas of North-East India and expressed his interest in collaborative research for the benefit of animals serving in the Armed Forces.

### NMRL, AMBERNATH

Dr G Satheesh Reddy, Secretary, DD (R&D) and Chairman, DRDO visited NMRL on 10 June 2022 for reviewing the progress of various projects being executed by Naval Materials Research Laboratory (NMRL), Ambarnath including 'Fuel Cell-based Air Independent Propulsion (AIP) system for Indian Naval Submarines'. At the outset, Shri PT Rojatkar, OS & Director,



Brig. Ajay Kumar, Brig RVS, HQ Eastern Command taking keen interest in DRL activities



Shri PT Rojatkar, OS & Director, NMRL with Dr SV Kamat, DS & DG (NS&M) presenting model of submarine to Dr G Satheesh Reddy, Secretary, DD (R&D) and Chairman, DRDO

NMRL welcomed Secretary, DD (R&D) and Dr SV Kamat, DS & DG (NS&M). A brief about the AIP project and other ongoing projects was presented by respective project teams. Subsequently, Secretary, DD (R&D) inaugurated

the LBP extension shelter at NMRL. The visit ended with a formal vote of thanks by Director NMRL. A model of the submarine with an AIP system was presented to Secretary, DD (R&D) by DS & DG (NS&M).