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# DRDO SUCCESSFULLY FLIGHT-TESTS INDIGENOUSLY DEVELOPED MPATGM FOR MINIMUM RANGE

# CONTENTS

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# DRDO SUCCESSFULLY FLIGHT-TESTS INDIGENOUSLY DEVELOPED MPATGM FOR MINIMUM RANGE

In a major boost towards AatmaNirbhar Bharat and strengthening of the Indian Army, DRDO successfully flight-tested indigenously developed low weight, fire and forget Man-Portable Antitank Guided Missile (MPATGM) on 21 July 2021. The missile was launched from a man-portable launcher integrated with a thermal site and the target was mimicking a tank. The missile hit the target in direct attack mode and destroyed it with precision. The test has validated the minimum range successfully. All the mission objectives were met. The missile has already been successfully flight tested for the maximum range.

The missile is incorporated with state-of-the-art miniaturised infrared imaging seeker along with advanced avionics. The test brings the development of indigenous third-generation man-portable anti-tank guided missile close to completion.

Raksha Mantri Shri Rajnath Singh congratulated DRDO and the industry for the successful test. Secretary Department of Defence R&D and Chairman DRDO Dr G Satheesh Reddy congratulated the team for the successful test.

# AERV DEVELOPED BY DRDO TRANSFERRED TO DEFENCE FORCES

Vehicle Research & Development Establishment (VRDE), Ahmednagar had undertaken project Development of Armoured Engineered Recce Vehicle (AERV). Under this AERV was developed on BMP-II chassis with incorporation of state-of-the-art Recce instruments. The salient features of the vehicle are:

- AERV is based on BMP-II vehicle with amphibious capability to cross water obstacles
- Reconnaissance capability in hatch down condition
- Unique combination of water and land recce instruments
- Data storage facility
- Capable of performing underwater survey
- Route marking capability
- Environmental control unit for crew comfort

With the array of instruments like water Recce instruments, land Recce instruments, navigation system and route marking and inherent protection of BMP-II vehicle, AERV will prove to be a feather in the cap of corps of engineers contingent. The VRDE had already delivered 16 no. of AERVs after rigorous trials. Ordinance Factory, Medak & BEL, Pune has been designated as production agencies and at present has been awarded with Regular Series Production (RSP) of 53 no.

After completing all the requirements of drawing and documentation, getting it vetted by CQA (ICV), the transfer of AHSP was initiated. A programme was conducted on 23 July 2021 for the transfer of AHSP to CQA(ICV) at OFMK, Hyderabad. The occasion was graced by Shri. PK Mehta, DS & DG(ACE), Dr SV Gade, OS & Director (VRDE), Shri Alok Mukharjee, Sc 'G' [R&DE(E)] and Shri. Rajendra K, GM (BEL) from Pune in virtual mode. Also, Shri Sangam Sinha, OS & DG(R&M), Lt. Gen RK Malhotra, DG (DGQA), Col RP Singh, Director (CE-4) were present through VC from New Delhi. The AHSP transfer certificate was handed over by Shri. MM Kulkarni, Project Director to Brig Naval Bhutani, Controller (CQA(ICV)). Shri. Alok Prasad, GM(OFMK) was also present during the ceremony.


# CELEBRATIONS OF 'AZADI KA AMRUT MAHOTSAV'

The teams of scientists from various DRDO laboratories celebrated 'Azadi Ka Amrut Mahotsav', commemorating 75 years of India's Independence, in villages of border areas. The teams were flagged off by Raksha Mantri Shri Rajnath Singh on 13 August 2021. A series of events were organised to mark the momentous occasion.

The scientists from Defence Institute of High-Altitude Research (DIHAR) hoisted the national flag at the world's highest terrestrial R&D laboratory at Changla (17664 ft) in Ladakh, a strategically important research center of DRDO. DIHAR, organised a field day cum interactive meet with the local people of Thang village for the betterment of agro-animal development. Thang is the last Indian village situated in the Siachen sector of Ladakh. The team of DIHAR interacted with nomads of Changthang valley bordering China and celebrated the 75th Independence Day.

The DIHAR also organised an expedition to Tangla-la Pass in Leh-Ladakh (17,480 ft), which is a key mountain pass connecting Leh with Himachal Pradesh. The event was attended by representatives from civil administration and ex-officials of DRDO. An expedition was organised by DIHAR up to the Kyon-Tsolake (16,437 ft) in Changthang valley. The members of the expedition team had a fruitful interaction with the armed forces deployed in the area. Dr OP Chaurasia, Director, DIHAR hoisted the national flag at the DIHAR campus in Leh and addressed the gathering.

# VAN MAHOTSAV CELEBRATIONS

## DFRL, MUSURU

Van Mahotsav is a tree-planting festival that is celebrated annually every year to spread awareness about forests. It is celebrated in the first week of July and plantation drives are carried out across the country. Thousands of trees are planted throughout the country during this festival as forests play an important role in maintaining the ecological balance and providing oxygen to human beings. Dr Anil Dutt Semwal, Sc 'G', Director Defence Food Research Laboratory (DFRL) initiated the drive by planting Guava sapling at DFRL premises followed by planting fruit saplings by senior scientists and staff of DFRL. The Van Mahotsav is a reminder that we must protect forests and stop deforestation.

## PXE, CHANDIPUR

Plantation drive Van Mahotsav was undertaken on 23 July 2021 in Proof & Experimental Establishment (PXE) with an aim to develop barren land into greenery so as to sustain and improve the ecosystem in PXE. This time the location chosen was Rocket Integration Building (RIB), a new facility which has come up recently. This location was chosen to develop landscaping around the building in which the tree saplings planted shall hold the soil and prevent erosion. In addition, it will provide a cooling effect and improve oxygen levels in and around the building where integration of sophisticated ballistics will be carried out. Around 150 saplings of fruit bearing trees and others were planted on the day.

Shri DK Joshi, Director, PXE graced the occasion by planting sapling and motivating the employees to plant trees around their workplace as well as at residential areas. Senior Officers, staff and members from the work committee also participated in the event.

# VACCINATION DRIVE AGAINST COVID-19

## DMRL, HYDERABAD

Defence Metallurgical Research Laboratory (DMRL) conducted a Covid-19 vaccination drive from 23 April 2021 to 27 April 2021 for the employees of DMRL. The drive was inaugurated by Dr G Madhusudhan Reddy, OS & Director, DMRL. Medical staff from Urban Primary Health Centre (UPHC), Uppuguda visited the lab and administrated the Covishield vaccine. A total of 249 beneficiaries received their first dose of the vaccine. The second drive was conducted on 29 June 2021 and 206 beneficiaries were vaccinated. The third and concluding drive was conducted on 23 July 2021 and 27 July 2021 and a total of 151 doses were given. Dr Reddy, graced the occasion and felicitated the UPHC, Uppuguda medical staff.

## NPOL, KOCHI

Naval Physical & Oceanographic Laboratory (NPOL) in collaboration with INHS Sanjivani, Southern Naval Command, Kochi, conducted COVID-19 vaccination drive for NPOL employees aged below 45 years.

The vaccination drive was also organized by DROMI, NPOL in association with Aster Medcity, Kochi, and was conducted on two days- 9 June 2021 and 14 July 2021. The NPOL employees, family members and NPOL contract employees made use of this opportunity. A total of 539 persons were inoculated with Covishield vaccine during this two-day vaccination camp. The programme was organised successfully by DROMI Committee and was well received by the NPOL fraternity. The programme was organised with strict adherence to COVID-19 protocols. The DROMI Committee made arrangements for separate waiting rooms, observation rooms, thermal scanning and effectively controlled the crowd by time slot based scheduling.

# 2ND IEEE INTERNATIONAL CONFERENCE ON RANGE TECHNOLOGY

The 2nd International Conference on Range Technology (ICORT-2021) by Institute of Electrical and Electronics Engineers (IEEE) was held virtually on 5 August 2021. The conference was organised by Integrated Test Range (ITR) Chandipur and inaugurated by Secretary, Department of Defence R&D and Chairman DRDO Dr G Satheesh Reddy. The event hosted speakers from across the globe, who presented their technological achievements in multiple subjects related to test and evaluation of defence systems.

In his address, Dr Reddy highlighted the importance of embracing recent developments in range technology to meet the future challenges in test and evaluation. He emphasised on the importance of the conference in exploring current trends in range technology and range Instrumentation, which are essential elements of a world class test range. The DRDO Chairman lauded the effort of ITR for organising an event of such scale amidst restrictions due to COVID-19 pandemic.

The conference was a very effective platform for all the range technology enthusiasts to interact with each other and stay updated with recent developments in relevant fields. More than 250 technical articles were submitted by experts on the relevant subjects, out of which 122 articles have been selected by a specialised technical committee. The technical presentation were done in four parallel sessions during 5-6 August 2021. A virtual industrial exhibition was also held in which more than 25 industries and organisations from India and abroad displayed their products and technologies.

The inaugural function of the conference was organised online with dignitaries joining over video conference from different locations. Former Scientific Advisor to Raksha Mantri Dr Avinash Chander was the Chief Guest on the occasion. The inaugural function was also attended by Director General (Missiles & Strategic Systems) Dr BHVS Narayanmurthy; ex-DG, DRDO Shri MSR Prasad; Director ITR Chandipur Shri HK Ratha; along with other delegates and participants. The ICORT held biennially was first organised by ITR in 2019.

# DRDO & AICTE LAUNCH REGULAR M. TECH. PROGRAM IN DEFENCE TECHNOLOGY

A regular M.Tech. Program in defence technology has been launched by DRDO and All India Council for Technical Education (AICTE) to impart necessary theoretical and experimental knowledge, skill and aptitude in various defence technology areas. Secretary Department of Defence R&D & Chairman DRDO Dr G Satheesh Reddy and Chairman AICTE Prof Anil D Sahasrabudhe launched the program during a virtual event organised by AICTE, New Delhi on 8 July 2021.

The program can be conducted at any AICTE affiliated institutes/ universities, IITs, NITs or private engineering institutes. Institute of Defence Scientists & Technologists (IDST) will provide support to the institutes for conducting this program, which can be conducted in online as well as offline formats. The program has six specialized streams — Combat Technology, Aero Technology, Naval Technology, Communication Systems & Sensors, Directed Energy Technology and High Energy Materials Technology. The students will also be provided opportunities to conduct their main thesis work in DRDO laboratories, defence PSUs and industries. The program will be helpful to students seeking opportunities in ever expanding defence research

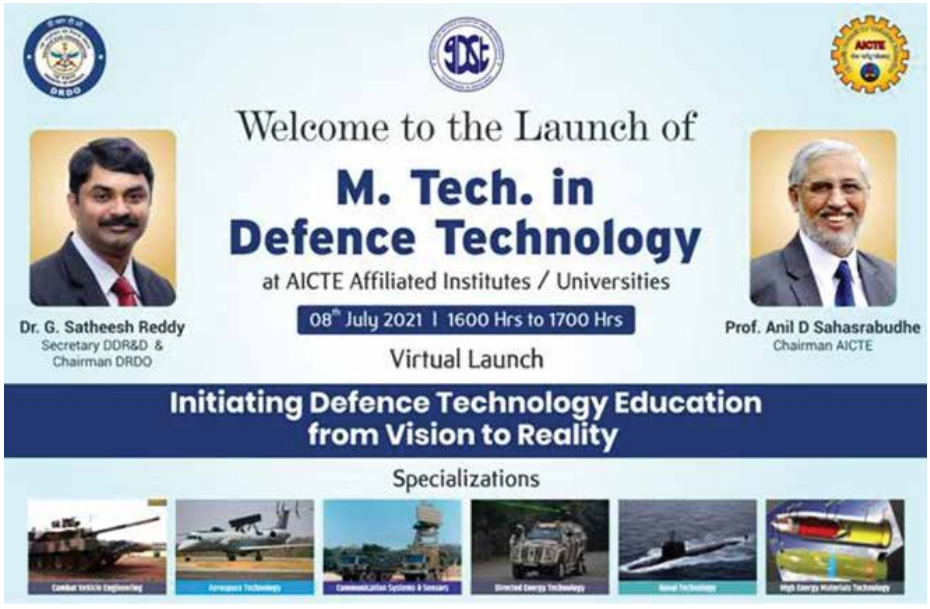
and manufacturing sector.

Raksha Mantri Shri Rajnath Singh congratulated DRDO, AICTE & Industries for starting a Post Graduate Program in defence technology. He said the program will help in achieving 'AatmaNirbhar Bharat'envisioned by Prime Minister Shri Narendra Modi.

In his address, Dr Reddy congratulated DRDO, AICTE and industries for evolving the PG program. He expressed hope that such a specialised program will enable the creation of a large pool of talented workforce for defence sector. He called upon the industry leaders to extend their support for this program and offer opportunities to the students.

Prof. Sahasrabudhe expressed happiness over the launch of the program and said it will not only generate skilled manpower pool in defence technology, but will also create spin-off benefits in terms of new defence startups and entrepreneurs. He emphasised that research should be connected with day-to-day life as it is fundamental for human psyche.

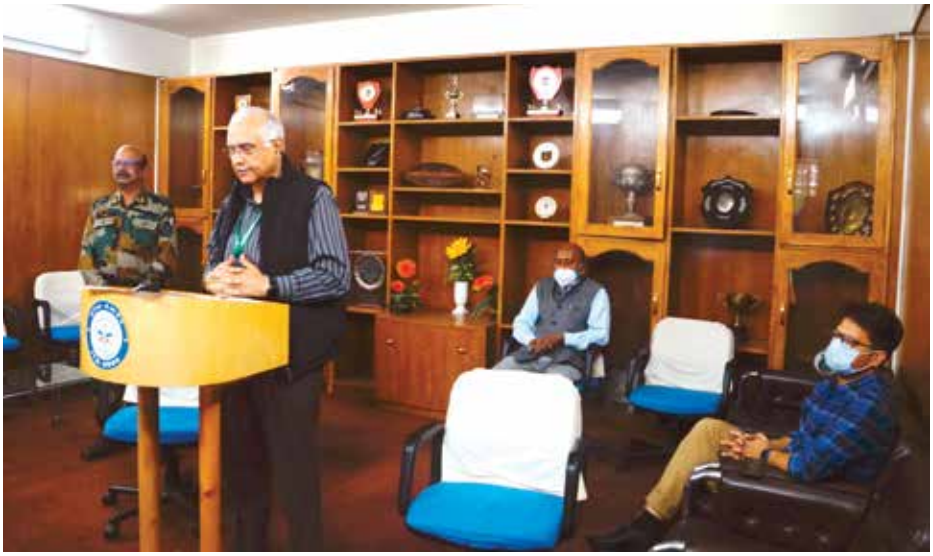
Chairman & Managing Director, Bharat Forge Limited Shri Babasaheb Neelkanth Kalyani congratulated DRDO and AICTE for initiating this program and highlighted its importance for creation of talent pool for defence technology with know-how and know-why capability to fulfil the vision of 'AatmaNirbhar Bharat'.




# ONLINE COURSE ON ENHANCING PUBLIC PROCUREMENT SKILLS

A five-day online course on 'Enhancing Public Procurement Skills' was successfully conducted by the Institute of Technology Management (ITM), Mussoorie from 28 June 2021 to 2 July 2021. A total of 42 officers engaged in material management related activities from 18 different DRDO labs/ estts attended the course.

The course was inaugurated by Shri Sanjay Tandon, OS & Director, ITM. He addressed the course participants and deliberated upon the importance of various facets of



public procurement. Gp Capt Raja K Mansharamani, ITM was the Course Director of the course.

Sessions on various topics, viz., Principles of Public Procurement, Overview of GFR, Essentials of RFP Drafting, Cost Estimation and Benchmarking Methods, Negotiation Skills, Elements of Contract Law and Contracting, Incoterms, Banking Instruments, Arbitration, GeM, Customs and Expectations of Finance were delivered by ITM faculty and the Guest Speakers. Smt. Anjali Ellis Shanker, IDAS, IFA R&D (Aero), Shri K Jambunathan, Regional Head, Balmer & Lawrie & Co Ltd. and Shri Saurabh Negi, Deputy Director (MM) were the Guest Speakers during the course.

During the valedictory ceremony Shri Tandon, OS & Director ITM thanked participants for their active participation and also encouraged the participants to implement the takeaways from the course. The feedback responses from the participants were overwhelming. Gp Capt Mansharamani delivered a vote of thanks.

# COURSE ON ADVANCED SUPPLY CHAIN MANAGEMENT AND FOOD TECHNOLOGY

Defence Food Research Laboratory (DFRL), Mysuru conducted a course on Advanced Supply Chain Management and Food Technology from 12 July 2021 to 15 July 2021 for the benefit of service officers involved in the handling of fresh and processed rations in armed forces.

The course was inaugurated by Dr R Kumar, Sc 'F' & Associate Director, DFRL, on 12 July 2012. The various topics covered in concurrence with the course theme were ration technology management, freeze-drying application, milling and quality evaluation of cereals and pulses, oil processing technologies, food supply chain management in services, food packaging, cold supply chain management of animal products, adulteration detection kit for milk meat frozen/chilled meat, post-harvest management of fruit and vegetables, infestation control and modern warehousing, basic practices of agriculture, nutritional


management and functional food.

The course was attended by 17ASC officers from different units and two faculty members from ASC Centre College, Bengaluru. The course included 12 classroom lectures, 5 online lectures, demonstrations of food processing facilities and food testing kits. The course also included visits to KMF dairy and CFTRI, Mysore and was well received by the participants. The feedback from the participants was quite satisfactory as most of them felt enriched and benefited from updated information about the latest development and the safety standards in the field of food science and technology.

The course was concluded with valedictory address and certificate distribution by Dr Anil Dutt Semwal, Sc 'G' and Director, DFRL. Dr OP Chauhan, was the Course Director, and Dr A Jagannath, was the Course Coordinator.

# ONLINE COURSE ON PROJECT MANAGEMENT COMPETENCIES

A four-day online course on Project Management Competencies was successfully conducted by the Institute of Technology Management (ITM), Mussoorie from 26 July 2021 to 29 July 2021. A total of 10 DRDS officers from Gas Turbine Research Establishment (GTRE), Bengaluru and 9 DRDS Officers from Centre for Fire, Explosive and Environment Safety (CFEES), Delhi, participated in the course. Presentations by ITM faculty were delivered via an online platform.

The course was inaugurated by Smt. Anita Mohindra, Sc 'F' & Officiating Director, ITM. She addressed the course participants and briefed them about the course. Shri MZ Siddique, DS & Director, GTRE addressed the participants and deliberated upon the importance of the course. Gp Capt M Subramanian ITM was the Course Director of the course.

The objective of the program was to prepare scientists to contribute more effectively in time-bound R&D projects and also acquaint them with the fundamentals of technology management, materials management, project management and organisational behavior.

Lectures on the Role & Scope of Technology Management in DRDO and Understanding Technology Life Cycle; Technology Gap Analysis; Technology Planning and Key Success Factors in Technology; Team Building and Conflict Management; Transactional Analysis; Time Management; Stress Management; Demand Initiation and Approval; Tendering and Contracting; International Trade (INCOTERMS & Letters of Credit), etc. were conducted.

## INFRA DEVELOPMENT

# HANDING OVER OF BRANCH ALLOCATION SYSTEM TO INDIAN NAVY

Defence Institute of Psychological Research (DIPR), Delhi has developed and standardised Branch Allocation System (BAS) for allocating three branches — namely, Executive Branch, Applied Branch and Electrical Branch and Mechanical Engineering Branch at Indian Naval Academy (INA), Ezhimala. The BAS is a fully computerised aptitude battery

that will be useful in allocating the branches to officers as per their aptitude by matching the qualities possessed by a person and skills required for that particular branch.

Based on a series of field trials and continuous user interactions conducted at the INA, Ezhimala, BAS was developed comprising six tests. All the tests have been psychometrically developed based on the data of cadets at INA. Reliability, validity and norms have been developed for the battery. The software was developed with the help of which data is stored, scored, converted to equivalent scores and five-point grades are generated. The final BAS report gives the merit list of all the cadets for each branch at INA.

The system was handed over for implementation to Rear Admiral KS Noor, Principal INA by Dr Gurpreet Kaur, Sc 'F', DIPR in the presence of Registrar, Joint Registrar and BAS nodal officers on 5 August 2021.

# PERSONNEL NEWS

## APPOINTMENT

### Director, CAIR

Dr Subrata Rakshit, Outstanding Scientist, has been appointed as Director, Centre for Artificial Intelligence & Robotics (CAIR), Bangaluru on 6 July 2021.

Dr Rakshit did his BTech from IIT Bombay in Engineering Physics in 1988. He completed his MS in Electrical Engineering in 1989, PhD in Image Processing from Caltech, USA in January 1994 and postdoctoral fellowship at Washington University, Medical School, St. Louis USA. He joined CAIR, DRDO in December 1994 and has worked on Image Processing, Computer Vision, Neural Networks and Cyber Security. He has published several papers in peer-reviewed journals, international and national conferences.

From 2000 to 2012, he headed the Computer Vision Group and worked on multi-sensory data fusion and net-centric warfare, participating in various CAIR activities related to Army's TAC C3I development projects. Dr Rakshit has received DRDO Award for his work on neural network-based image matching in 1997 and for image and video processing for net-centric systems in 2012. From January 2013 to August 2017, he had been with the Secure Systems Division of CAIR, initially as Division Head and then as Technical Mentor. He guided design and development in the areas of cyber security and also contributed to information security policy formulation. As Associate Director (Technology) from 2017 — 2021, he has guided the CAIR project teams, actively steered various design reviews and represented CAIR in external DRDO and GoI committees. He has contributed to the RM's AI Task Force report and has interacted with various MoD organisations on the adoption of AI technologies in indigenous defence systems.

## APPOINTMENT

### Director, DRL

Dr Dev Vrat Kamboj, Sc 'G', has taken over as Director, Defence Research Laboratory (DRL), Tezpur on 8 July 2021. He graduated in Forestry, completed MSc and PhD in Microbiology from Haryana Agricultural University, Hisar. He received CSIR Senior Research Fellowship for his doctoral degree. Dr Kamboj started his professional career at DRDE, Gwalior as Sc 'C' in the year 1998 and extensively contributed in the field of bio-degradation and bio-defence. Dr Kamboj was instrumental in the development of bio-digester technology for eco-friendly disposal of human faecal matter, widely used by Indian railways, armed forces and civil population. Under bio-defence, he worked on the detection of potential microbial bioagents from environmental samples and developed recombinant antibodies for the detection of biological warfare agent. He has also managed and executed several research projects on Bio-defence and Bio-digester. Dr Kamboj is the recipient of the 'Young Scientist Award' from the Association of Microbiologists of India, and several DRDO awards, that include DRDO Scientist of the Year Award, Defence Technology Spin-off Award, Technology Group Award and Laboratory Scientist of the Year Award for his contributions in Bio-digester technology. Dr Kamboj has 25 patents, 70 research publications and 3 books to his credit.

### Director, VRDE

Dr Shailendra V Gade, Outstanding Scientist, has been appointed as Director, Vehicles Research & Development Establishment (VRDE), Ahmednagar with effect from 8 July 2021.

Dr Gade obtained B. E. in Mech. Engineering from NIT Raipur in 1985. He pursued post-graduation MTech. in Mechanical Engineering (Design) from IIT Bombay and PhD from IIT Delhi in the area of high velocity impact.

Dr Gade as Project Director, has spearheaded the flagship and one of the most ambitious projects of DRDO '155 mm x 52 Calibre Advanced Towed Artillery Gun System (ATAGS)' at ARDE. The ATAGS is arguably the best in the category of artillery gun system in the world. Under his leadership, six fully integrated ATAGS have been realised achieving all the QR parameters. The systems have been evaluated at PFFR Pokharan and SFFR Sikkim successfully and demonstrated their fire power and mobility in different terrains.

Dr Gade initially worked on the design and development of launcher system for India's fully indigenous Multi-Barrel Rocket Launcher System — Pinaka and played a pivotal role towards fructifying this system and its induction into army. Subsequently, he took over the Small Arms Group at ARDE and led the team successfully towards realizing Joint Venture Protective Carbine (JVPC), Under Barrel Grenade Launcher (UBGL), Multi-Calibre Individual Weapon System (MCIWS), Air Bursting Grenade (ABG) apart from improvements in the INSAS small arms. He carried out extensive research and formulated a project proposal on 'Future Infantry Soldier as a System (F-INSAS)' towards enhancing the capabilities of the soldiers in the areas of lethality, surveillance, survivability, protection and communication. The army is constantly working towards implementing the concept of F-INSAS in the Indian army.

Dr Gade has led the team in developing the armament system for Infantry Combat Vehicle (ICV) for DRDO's project Abhay. The Abhay was equipped with a main gun system and a very innovative two column feed and ejection system to handle two different ammunitions. He has been instrumental in leading the team in developing various FSAPDS and practice ammunition for MBTand other main battle tanks.

Dr Gade has expertise in the design of small arms, artillery and tank guns, modeling & simulations, manufacturing technologies, system-integration, test & evaluation, composite materials, All electric servo control, electrohydraulic control systems, Kinematics & synthesis of mechanisms, materials engineering, kinetic energy ammunition, numerical simulation of penetration mechanisms, behavior of materials at high

strain rate, surface engineering technologies, etc.

He is the recipient of DRDO Performance Excellence Award 2002 (for Pinaka), Team Leader Award for 'Modern Sub Machine Carbine' in 2006, DRDO 'Scientist of the Year Award 2013', Team Leader Award for Air Bursting Grenade in 2015 and 'Agni Award for Excellence in Self Reliance 2017'

Dr Gade has guided B Tech & M Tech students as Project Guide and has more than 40 papers to his credit in national & international journals. He has been delivering technical lectures in the Infantry and artillery international conferences.

He is a member of many professional societies.

## AWARDS

### Fellow of Indian Institute of Metals

Dr G AppaRao, Sc 'G' of Defence Metallurgical Research Laboratory

(DMRL), Hyderabad has been selected as a Fellow of Indian Institute of Metals (IIM) with effect from 1 August 2021. This recognition is based on the significant contributions made by him in the field of metallurgy during the recent past.

# VISITS

## CAIR, BANGALURU

Vice Chief of Army Staff Lt GEN CP Mohanty, PVSM, AVSM, SM, VSM visited Centre for Artificial Intelligence & Robotics (CAIR) on 22 July 2021. There was a briefing by OS & Director, CAIR Dr Subrata Rakshit followed by a discussion and demonstration of technologies developed by CAIR in the area of intelligent systems & robotics and command control system.

## DIHAR, LEH

Lt Gen PKG Menon, AVSM, General Officer Commanding (GOC), HQ 14 Corps visited Defence Institute of High Altitude Research (DIHAR) on 2 July 2021. Dr OP Chaurasia, Director, DIHAR briefed on various ongoing high altitude agro-animal activities and over the years, with the effort of DIHAR local farmers of Ladakh are able to supply fresh food requirements of army, during the summer season. Now the institute

is intensively endeavouring to develop technologies like winter vegetable storage, passive greenhouse, micro farming, double-humped camel and poultry whereby the local supply of fresh food during winter months could be enhanced. GOC HQ 14 Corps congratulated DIHAR team for the excellent R&D efforts, which are immensely benefitting the soldiers and the local society at large.

## DIPR, DELHI

Dr U K Singh, OS & DG (LS), visited Defence Institute of Psychological Research (DIPR) on 14 July 2021. Director DIPR briefed about various projects and activities being carried out by DIPR. The DG (LS) during his address urged for more joint ventures and bring out not only the best but also alternative approaches that would open up a plethora of research avenues. He mentioned that the inputs of the lab are not only helpful to the services but also pave way for furthering the efforts in research and product designing in future. He also visited the facilities and appreciated the work being done at the lab.

## DLRL, HYDERABAD

Dr G Satheesh Reddy, Secretary, DDR&D & Chairman DRDO, along with Ms. J. Manjula, DG (ECS) and Shri G. N. Rao, DG (PC&SI) visited ELSEC campus of Defence Electronic Research Laboratory (DLRL), Hyderabad on 12 July 2021. The dignitaries witnessed a technical demonstration of state-of-the-art sensors developed by DLRL, capable of search, interception, direction finding, analysis and jamming of communication and radar threat signals.

Dr Reddy then reviewed the status of major programmes/ projects-namely, Samudrika, Shatrughat, Samaghat, Himshravan, Passive Homing Head (PHH), ELINT System, NOAR, etc. Appreciating the efforts of the scientists of DLRL, Secretary, DDR&D urged the project teams to comply with the timelines committed by the laboratory to the Users.