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Dr. P. Sivakumar, DS & Director, CVRDE

Convener

Smt. V. Jayashree Sivakumar, Scientist G, CVRDE

Members

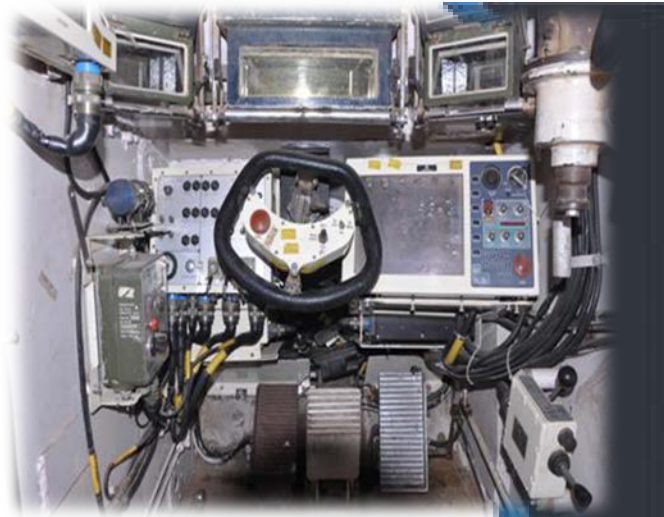
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12. Shri A. Hafeezur Rahman, Scientist E, CVRDE

Contact Details

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Registration Form

Details are available in www.drdo.gov.in



Combat Vehicles Research and Development Establishment

DRDO, Ministry of Defence, Avadi, Chennai – 600054



CVRDE RUBY JUBILEE CELEBRATION

FTC2018

23 February 2018

Venue:
ARJUN Auditorium
CVRDE, Avadi, Chennai



CONVENER:

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Combat Vehicles Research & Development Establishment
DRDO, Ministry of Defence, Avadi, Chennai – 600054



National Technical Seminar on

FUTURE TECHNOLOGIES FOR COMBAT VEHICLE ELECTRONICS



About the event

Combat Vehicles Research & Development Establishment (CVRDE), one of the premier establishments of Defence Research and Development Organization (DRDO) proposes to conduct a national technical seminar on "Future Technologies for Combat Vehicle Electronics", paving the foundation to develop a Centre of Excellence in "Combat Vetronics".

The role of electronics in combat vehicles has come a long way right from the Battle of Somme in 1916. Gone are those days when electronics for combat vehicles served as appendages to mechanical systems to augment the three apex of the iron triangle namely firepower, mobility and protection. Electronic systems have provided the key leverage to include systems such as ISTAR or C4I2SR as the nodal centre of the iron triangle to obtain strategic advantage from missions starting from state-to-state to asymmetric warfare. Abundant resources of software tools and the emergence of autonomous arena necessitate innovative engineering practices without compromising the standards.

The objective of the seminar is to inculcate a perceptive alacrity to formulate strategies for effective technological solutions. It is intended to make a survey on advanced divergent Electronics, research networks and creation of advanced facilities providing platforms for synergy.

Call for papers

Original research articles written in English in IEEE format broadly in line with the scope of the seminar are invited. Abstracts/Manuscripts are to be communicated to:

nts.ftcve2018@cvrde.drdo.in

The manuscripts in IEEE format will be peer-reviewed prior to acceptance. Accepted manuscripts will be published in electronic format and will be considered for publication in **'Defence Science Journal'**.

Important Dates:

Submission of Abstract : 06 November 2017
Notification of acceptance : 20 November 2017
Submission of full manuscript : 04 December 2017
Author/Delegate registration : 14 February 2018

Seminar Topics

The seminar intends to be a platform for amalgamation of contemporary concepts and technologies related to Combat Electronic Systems. The overall sessions include the following:

- ✓ C4I2SR, ISTAR, Battlefield management
- ✓ Vetronics Architecture with In-Vehicle Networking
- ✓ Digital Management of Powerpack, Active Suspension, Attitude Control & Dynamic Track Tensioner System
- ✓ Vehicle survivability/ Active protection System
- ✓ Hybrid power systems
- ✓ Energy storage & Intelligent Power Management Systems
- ✓ Power drives and controls
- ✓ Advanced automotive electrical /electronic systems
- ✓ Advanced communication technologies & Navigation Systems
- ✓ Sensor technologies, Micro-Electro Mechanical Systems (MEMS) & Nano-Electro Mechanical Systems (NEMS)
- ✓ Opto-Electronics & Multi-spectral imaging
- ✓ Unmanned Ground Vehicles & Artificial Intelligence (AI)

- ✓ Crew Station Human Machine Interface (HMI) & Display technologies
- ✓ Signature Management and Stealth
- ✓ Advanced Weapon Systems
- ✓ Health and Usage Monitoring System (HUMS)
- ✓ Internet of Things (IOT) and Cyber security
- ✓ Embedded Systems Architectures & Reconfigurable Systems
- ✓ Software development life cycle standards
- ✓ Future Combat Vehicle Vetronics Technologies
- ✓ Model based development (MBD), Hardware In loop Simulation (HILS)
- ✓ Other areas pertinent to combat vehicles

About CVRDE, Chennai

CVRDE the premier DRDO establishment involved in the research & development of tracked combat vehicles traces its pre-independence roots as the Mechanical Transport Establishment in Chaklala which later became CVRDE in 1975. CVRDE has developed a number of products to its credence, which have been successfully user inducted such as the Armoured Patrol Car, Vijayanta MBT, 130 mm Self Propelled (SP) Catapult Gun on Vijayanta, Carrier Mortar Tracked (CMT), Armoured Ambulance, Combat Improved Ajeya, Bridge Layer Tank (BLT) on T-72 and its flagship program Arjun Main Battle Tank.

Arjun MBT, the feather in the cap of CVRDE is designed to Indian Army's most stringent requirements with superior firepower, mobility and survivability and is capable of defeating all contemporary threats in the battlefield. After a rigorous test and evaluation cycle, two regiments of Arjun MBT were inducted into Indian Army's Armoured Core and are proudly serving the cause of the Nation's Defence. Based on the lessons learnt and the future threat scenario, Arjun MBT Mk-II was developed which includes advanced technologies that augment for firepower, mobility, survivability, reliability, maintainability and ergonomics viz. Missile firing capability, Automatic Target Tracker, Commander's Panoramic Sight, Remote Control Weapon Station, Explosive Reactive Armour, Improved Kanchan Armour, Track Width Mine Plough, Laser Warning Countermeasure System, Advanced Running Gear system, In-Vehicle Networking via CAN bus & Touch Screen Crew Dashboard.

Adopting the concept of a Universal Combat Weapon Platform, Arjun MBT was configured to be developed into variants. Thus four products namely, BHIM 155 mm SP, 130 mm SP Catapult, Arjun BLT and Arjun Armoured Repair & Recovery Vehicle (ARRV) were developed of which ARRV is in the advanced stage of development. Keeping in line with the future requirements of the forces, CVRDE has configured Next Generation MBT (NGMBT) to cater to the future threat spectrum including a 2D warfare. Further, CVRDE has developed unmanned tracked platforms namely Mission Unmanned Tracked (MUNTRA) project with surveillance, mine detection and NBC payloads and cutting edge technologies such as All Electric Drive for Gun Control System, Integrated Fire Control System, Battlefield Management system (BMS), Integrated Automotive Vetronics System (IAVS), Intelligent Power Management System (IPMS), 1500 hp Engine & Transmission etc. In addition, CVRDE has also ventured into aircraft projects developing crucial LRUs such as AMAGB, PTO Shaft, Bearings, 5 kW BLDC Generator & Filters for LCA-Tejas and Landing gear systems for UAV Rustom-II.

To serve the R&D efforts, CVRDE is equipped with state-of-the-art test facilities namely Engine Test Facility (ETF), Suspension Test Facility (STF), Wheel Test Facility (WTF), EMI/EMC Test Chamber, Environmental Test Chamber, Simulator for Driver & Gunner, Electrical & Electronic test facilities. In addition, it is also in the process of developing metallurgical & Nano solutions for its futuristic requirements. CVRDE has a dedicated Centre for Engineering Analysis & Design Validation to cater to its current and future projects.

About Chennai

The seminar will be conducted in Chennai, the capital city of Tamil Nadu and the fourth largest city in the country. Chennai is a journey into timeless India - a kaleidoscope of moods, rich in the treasures of history from temples and shrines to forts and palaces, the landscape of the past lives easily with the present. Retaining much of its traditional charm, this 350 year old city is the gateway to the south, providing many a fascinating vignette of southern heritage. Santhome Basilica, St Mary's Church, Government museum, Kapaleeswarar Temple, Parthasarathy Temple, Kalakshetra, Marina Beach, Elliot's Beach, Ice house, Guindy National Park, Snake Park, Semmozhi Park, ISKCON Temple, Crafters Village, Government Museum Egmore, Government Museum Fort St. George, Connemara Library, Anna Centenary Library, Arignar Anna Zoological park, Valluvar Kottam, Tidel IT Park and amusement parks such as Mayajal, Kishkinta, MGM Dizzy world, VGP Golden Beach and Go Carting Alleys are some sights in Chennai which tourists from all over the globe throng to. The British influence on the city is most evident in the various cathedrals, buildings in the Indo-saracenic style of architecture and wide tree lined avenues. The varied aspects of traditional south Indian culture exist alongside the lifestyle of a modern city, complete with its plush hotels and restaurants. Mammallapuram, famous for its rich & exquisite rock cut caves and temples is a must visit close to Chennai. This place also includes the famous shore temple which is an UNESCO world heritage site along with a light house.

Chennai is one of the frontier industrial cities in India with several large, medium and small scale engineering industries and numerous academic and research institutions. Kamaraj National and Anna International Airports are situated at Tirusulam, about 20 km from city. There are direct flights to all destinations in India from Chennai. Eight airlines operate their domestic flights from the Kamaraj National Terminal. Chennai is connected by rail with all major towns and cities in India. The main railway stations in Chennai are Chennai Central and Chennai Egmore. In addition, three local train transport namely EMU, MRTS & Metro crisscross the city providing rapid connectivity. A good network of roads both State & National Highways connect Chennai with all important places in Tamil Nadu and many cities in South India with excellent transportation connectivity.

The suburb of AVADI situated about 28 km from the Chennai city, accommodates numerous Defence Establishments like CVRDE, Heavy Vehicles Factory, Engine Factory, Ordnance Clothing Factory and Repeater stations of Indian Air Force & Indian Navy and educational Institutions.

Registration Fee

Industry / R&D Organization : Rs. 2500/-
Academic Institutes : Rs. 1500/-

Payment can be made through Internet Banking or DD. Current A/c Name: "FTC2018-CVRDE" & No. 37106365335. DD should be in favour of "FTC2018-CVRDE" payable at Chennai (Name of the Bank: SBI, HVF, Avadi, Chennai-600054, IFS Code: SBIN0004675).

Accommodation

Accommodation will be arranged on request in Hotels/Guest Houses on payment basis.

Souvenir

A Special souvenir consisting of abstract of papers will be brought out in the seminar. It will also provide an opportunity to industries/dealers/traders/equipment manufacturers/practicing engineers/consultants to advertise their products & services.

Exhibition

Apart from presentations, it is planned to have a limited number of exhibits of products from industries and institutes on payment basis.

Chief Patron

Dr. S. Christopher, Secretary, Dept. of Defence R&D & Chairman, DRDO, Govt. of India

Patrons

1. **Dr. G. Satheesh Reddy, DS&SA to RM, DG (MSS)**
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