

## INDIA'S FIRST PRIVATE SECTOR INITIATIVE FOR DEFENCE TECHNOLOGY STUDIES

### **Objective of the Centre**

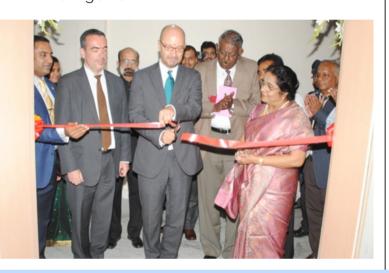
The very objective of the CDTS is to create a cadre of professionals / specialists in the Defense Technology Domain.

#### Vision

To create a cadre of Defense Technology and Management Professionals to meet the Upcoming needs in the Defence Technology & Manufacturing industries and help towards achieving self-reliance in Defense.

#### **Mission**

To provide a conducive learning environment to budding Professionals to achieve excellence in the field of Defence Technology and Management



#### **Achievements**

- Two workshops were conducted for the faculty members of HITS by eminent professors from Cranfield University on 22<sup>nd</sup> November 2012.
  - Defence Modeling and Simulation
  - System Engineering and Defence Acquisition
- Book "India's Strategic Spectrum a Technological Perspective" was published by CDTS and released by the Governor of Chattisgarh, Shri. Shekhar Dutt during the DEFED 2012 Conference on 23 – 24 November 2012
- Proceedings of DEFED 2012 is published and circulated in India and Abroad.



#### **International Collaboration**

- CDTS was represented at Cranfield-MBDA HITS tripartite agreement for academic collaboration in 1st Week of May 2013.
- CDTS was also represented in a academic interface with Glyndwr University and Warwick University (UK) for possible academic collaboration in identified areas, in May 2013.
- CDTS HITS represented at Cranfield under the chairmanship of Pro Chancellor when MOU was signed between the two Universities in 1st week of May 2013 at CU (UK)

# **Developing the Capabilities in Futuristic Defence Technologies** MOU exists with MBDA, UK for technical interaction

Interaction with MBDA, France

- Work in the field of Dual mode Ramjet-scramjet engine for hypersonic missiles (NIRBY-subsonic missile M=0.7; BRAHMOS supersonic missile M= 2.5; Hypersonic missile M=6-7)
- Interacted with Dr. Francois Felempin, Project Director, LEA Hypersonic Programme, MBDA,
   France

### Interaction with Naval research lab., Washington DC

- · Dr. Kailashnath, Head, Department of fluid flow, heat transfer and combustion
- Rotating detonation wave engine for futuristic aircraft engine

#### Interaction with TsAGI, Moscow

- Dr. Alexander Chevagin, Head, Propulsion and Aerodynamics group, TsAGI, Russia
- · Research Areas in Propulsion and Aerodynamics are being identified for further interaction

#### **Courses at CDTS**

Following Courses duly approved by the Academic Council of HITS

- PhD Full Time / Part Time Defence & Strategic Studies
- M. Phil Full Time Defence & Strategic Studies
- MBA Defence Technology Management

#### **For Details Contact**

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#### **Global Class Room for CDTS**

Global Class room has already been Established for video conferencing with universities/industries.

Conduct of short term courses in collaboration with Cranfield University- Defence Academy of UK are under process.

## **Courses Proposed to be Conducted at CDTS**

#### M. Tech. (Defence Tehnology) (Mech.)

- Guided missiles: Aerospace propulsion, Aerodynamics, Navigation, Guidance and Control, Aerospace structures and Flight mechanics
- Armament and Combat Vehicles: Advanced mechanics of materials, Mechanical vibrations, Armour protection systems, small arms and cannons and combat vehicle technology
- Air armament: Ballistics of bombs and projectiles, air armament design, air armament control and guidance, war head design and mechanisms
- Marine engg.: Ship dynamics and marine systems, advanced fluid mechanics, CFD, Marine gas turbines, marine diesel and steam engines
- Robotics: Introduction to Robotics, artificial intelligence and expert systems, mechatronics, robotic path planning and control, robot kinematics and dynamics
- Material science and technology: Modern materials for defence applications, materials for high temperature applications, fatigue, fracture and failure analysis, NDT
- System Engg., for defence capability

## M. Tech. (Defence Tehnology) (Electronics)

- Cyber Security: Computer network security, operating system security, cryptography, data mining techniques, secure software engg.,
- Software Engg., : Introduction to software engg., software verification, validation and relaiability standards
- Navigation systems: GNSS receiver design and applications, multi sensor integrated navigation, inertial navigation, indoor navigation
- Radar and communication: microwave engg., Digital signal processing, Radar system design, Antenna systems
- Wireless networks and application: Mobile and wireless communication, Advanced computer networks, Digital system design using FPGA, SOC and embedded systems, EMI, EMC, EMP, NEMP design
- Modelling and simulation of Military Vehicles: Defence simulation and modelling Short term courses leading to PG Diploma in Defence Technology