

DRDO, IITs to propel research in critical defence aerospace technology

On Friday, the country took a step towards being self-reliant in high-end technology in the defence sector.

The foundation stone for the Center of Propulsion Technology (CoPT) was laid at IIT Bombay by the minister of state for defence Subhash Bhamre.

“Self-reliance is necessary in defence. It is a long-term project of 25 years divided into four phases. The laboratory is expected to be ready in the next two years,” said Bhamre at the inauguration function.

It was in the 1990s that India first realised the need to be self-reliant in critical aerospace technology. India, which till then had acquired military aircrafts from Russia, was in a fix as it did not even have critical technology such as the single crystal blade technology to develop an indigenous turbofan for fighter crafts.

The deficiency in critical aerospace technology came to the fore when Gas Turbine Research Establishment (GTRE) made Kaveri engine could not propel the indigenous Light Combat Aircraft (LCA) to the skies.

This led the top defence think tanks to moot the need for a dedicated research facility that would focus on critical component needs for propulsion in aerospace sector.

In July this year, a memorandum of understanding was signed between the Defence Research Development Organisation (DRDO), Indian Institutes of Technology Bombay and Madras to facilitate a bi-nodal Center of Propulsion Technology (CoPT).

“CoPT will not be involved in day to day problems encountered in development projects” said Bhamre.

The inauguration was also attended by IIT Bombay director Devang Khakkar, director of IIT Madras Bhaskar Ramamurthi, DRDO Chief Controller (R&D) Hafizur Rehman and DRDO chairman S Christopher.

“CoPT will be the backbone of research activity in defence. It can morph into a back-end research lab of the DRDO,” said Bhamre.

The CoPT mainly focuses on four things namely futuristic aero-engines, hypersonic propulsion for long-duration flight, solid propellant combustion modeling and integrating aeronautical and propulsion sciences.

Christopher said, “The Gas Turbine Research Establishment, a DRDO laboratory that made the Kaveri jet engine, will also be involved in the project. PhD students will be involved in the project for DRDO and will do research and build aeronautical-related equipment. They will also get an opportunity to work on the Kaveri jet engine.”

The Pact

The DRDO and IITs Bombay and Madras entered into an agreement on July 9 this year for establishing facilities for Center of Propulsion Technology (CoPT).

They will seek other institution’s participation in military science and manufacture as a part of the government’s effort to decrease dependence on foreign technology. The faculties of IIT Madras and IIT Bombay will participate in the project and research which will be conducted for the first time in India.

DRDO ropes in IIT Bombay and Madras for propulsion research

Mumbai: Minister of State for Defence Subhash Bhamre today laid the foundation stone of 'Centre of Propulsion Technology' here, set up by Defence Research and Development Organisation (DRDO) along with IIT-Bombay and IIT-Madras to support country's plans for developing aero- engines and hypersonic propulsion for long duration flight.

The centre, established at the Indian Institute of Technology-Bombay in Powai here, will be operational in the next two years and the research there will be jointly conducted by IIT-Bombay and IIT-Madras.

This is the third such centre being set up where a premier academic institute has been roped in for defence related research and development of technology.

Earlier, similar centres have been set up in Kolkata and Delhi.

Bhamre said the centre is going to be a game-changing institution in the field of defence research.

"We want research teams to come up with futuristic technologies for defence sector. There will be target oriented research, collaboratively done with experts and scientists," he said.

There have been some gaps in the earlier technologies, hence, we have decided to bring best institutions together for defence and security enhancement, Bhamre said.

Chairman of DRDO, S Christopher, said, "We are looking for at least five year long research projects at such centres. Earlier, projects of few years were given to academical institution like IIT-Bombay but its duration was around three years."

"The centre is based on a long term contract between DRDO and the IITs and will cater to more important and crucial research works, which will have specified deadline to achieve," he said.

Meanwhile, Devang Khakhar, Director of IIT-B, said, the first meeting of research advisory board was held on Thursday and the first phase of development has been approved already.

The governing council will take a final call soon over the proposals from the board, he said.

The centre for propulsion technology will facilitate and undertake multi-disciplinary directed basic and applied research in the focused areas of futuristic aero-engines, hypersonic propulsion for long duration flight, solid propellant combustion modelling and morphing aircraft including its propulsion and associated technologies addressing the emerging defence and security needs.