

Department of Science and Technology Grants Rs 14.43 Crores to IIT Kanpur for Cyber Security Center

Kanpur, UP: Department of Science & Technology, Government of India, has recently sanctioned a grant of INR 14.43 Crores to IIT Kanpur in response to a proposal by the institute to set up the *Interdisciplinary Center for Cyber Security and Cyber Defence of Critical Infrastructures*. The grant has been sanctioned for a period of five years and covers expenditures for the setting up of the center such as infrastructure, equipment etc.

Cyber Security has become a pressing need the world over, with major cyber-attacks coming to light every few months. In October 2016, as many as 32 lakh credit cards from different Indian banks were compromised, according to National Payments Corporation of India. There were a number of cyber security attacks post demonetisation, according to TAC Security, a cyber-security solutions provider. In 2016 and early 2017, cyber attacks disabled the power delivery to large number of customers in Ukraine. Turkey's banking infrastructure was attacked by denial of service attack bringing all banking activities to a halt last year. Bangladesh central bank lost equivalent of 80 million dollars through cyber attacks.

Around the world, a number of countries are working on strengthening their cyber security technology to protect their national security as infrastructure disabling cyber attacks is a threat to national security. In India though, the work in this field is still in its nascent stages. A consolidated effort from the cyber security expertise present in the country is the need of the hour and the new center coming up at IIT-K plans to work specifically towards this. To achieve this goal, the Interdisciplinary Center for Cyber Security and Cyber Defence of Critical Infrastructures will be working closely with researchers from IIT Bombay, IIT Kharagpur, ISI Kolkata, IIIT Delhi and MNIT Jaipur.

"Working with various industry and government bodies we are convinced that cyber security research, training and man power development are national imperatives. We are very pleased that DST has decided to fund our center and help us build the capabilities to carry out cutting edge research and training in the field of cyber security, in particular with the goal to protect our critical infrastructures. We look forward to the journey in the next five years to the development of world class capabilities here at IIT Kanpur," said Prof. Manindra Agrawal, Principal Investigator for the upcoming center.

The cyber security and defence center at IITK plans not only to engage faculty in cutting edge research in the domain of cyber security of critical industrial systems (water treatment plants, nuclear power plants, power distribution infrastructure) but also to engage in training through courses with an emphasis on cyber security. They also plan to have summer courses and internships for students from other institutes as well as custom training courses for government and industry executives. Consulting to the government and the critical infrastructure sector by the faculty and researchers at the Center will also be one of the focus areas.

One of the major component of the centre will be an Industrial Systems Cyber Security test bed – a first in India of its kind – similar to the test beds at the Idaho National Labs, Sandia National Labs, and National Institute of Standards and Technology in the US. It will take about a year to build this facility where research on cyber vulnerabilities of critical industrial systems will be carried out along with development of technology to protect them.

"We recognized the need for developing a research and education program in cyber security -- especially in the sector of critical infrastructures such as power grid, manufacturing automation,

electricity generation facilities, building automation, railway signaling etc. and went to DST with a compelling proposal to establish a national test bed for experimenting with cyber security of such systems, and carry out research to develop defence techniques. Through many rounds of presentations, and revisions we were able to convince multiple panels of experts and external reviewers that we have the interdisciplinary expertise at IIT Kanpur.

Our center has experts in cyber security, cryptography, machine learning, formal methods, program analysis, electrical engineering, networking and computer systems -- a convergence of which is essential to build cyber security of critical infrastructure. We are very confident that we can build a world class facility and research/education/training program," said Prof. Sandeep Shukla, Co-Principal Investigator for the center.

Speaking about the importance of this upcoming center, Dr. Indranil Manna, Director, IIT Kanpur, said, *"Cyber security is a major thrust area in this institute considering contemporary national need and opportunity for technological innovation where IITK can make a significant impact."*

In the recent past, IIT Kanpur has taken a number of initiatives in the field of cyber security research. They recently signed a MoU with NYU Tandon School of Engineering, with whom they also hosted the Cyber Security Awareness Week in November 2016. They also signed an MoU with the Interdisciplinary Center for Cyber Security at Tel Aviv University in Israel, and MoU with Bombay Stock Exchange to cooperate on cyber security.