

N.3: Technology transfer of Agni-Rakshak and RF amplifier modules

In a significant advancement for technological innovation, two cutting-edge technologies developed by RRCAT have been successfully transferred to Indian industries on 8th June 2023. These technology transfers (TTs) involve the 'Agni-Rakshak' and 'RF amplifier modules'. TT agreement was signed between Dr. S. V. Nakhe, Director, RRCAT on behalf of Department of Atomic Energy, Government of India and representatives of industries. All these efforts are contributing to “Atma Nirbhar Bharat” mission of Government of India. The ceremony was witnessed by Shri Purushottam Shrivastava, Shri M. Lad, Dr. S. K. Dixit, Dr. Om Prakash, Dr. Akhilesh Jain, Dr. C. P. Paul, Dr. Manoj Saxena along with members of Coordination Committee for Patent, Technology Transfer, and Incubation (CCPTTI), Coordination Committee of Incubation Centre (CCIC), and Technology Transfer Cell, RRCAT.

'Agni-Rakshak' is a Raman optical fiber distributed temperature sensor, which has applications in fire monitoring in hospitals, buildings, road & rail tunnels, stations, cable trays of power cables, high-capacity transformers, coal conveyors, warehouse and storage, cement industry, oil & gas industry, nuclear industry and sensitive installations, etc. The system is very useful in detecting the onset of fire by sensing the heat. It has the capability to provide information about the location, width and temperature of the fire zone to which the sensing fiber is subjected to. The system can generate audio-visual alarms for various fire zones in the fiber. This revolutionary system, utilizing Raman optical fiber technology, enables the creation of a distributed fire sensor network, providing real-time and accurate fire detection in a wide range of environments. The technology is poised to transform fire safety protocols by offering an early warning system that can significantly reduce the risk of fire-related incidents. Two firms, M/s Indiyio, Indore and M/s B C Technomation Pvt. Ltd., Bhopal, have been granted licenses for the groundbreaking Agni-Rakshak technology.



TT Agreement handed over to B C Technomation Pvt. Ltd., Bhopal by Dr. S. V. Nakhe, Director, RRCAT.



TT Agreement handed over to M/s Technopower International, Mumbai by Dr. S. V. Nakhe, Director, RRCAT.



TT Agreement handed over to M/s Indiyio, Indore by Dr. S. V. Nakhe, Director, RRCAT.

Solid-state RF amplifier modules are an indispensable part of any high-power system/ transmitter. They have been widely used in radio frequency systems such as radar, mobile communication, jamming and identification, and occupy a very important position. This technology has distinct advantages in terms of small size, low cost, durability, high efficiency, and in-built safety. The potential deployment of this technology is in the domestic microwave, industrial furnaces and communications in defense and space, etc. This sophisticated technology is designed to amplify radio frequency signals with high efficiency and precision. The RF amplifier module holds immense potential in the realm of communication and wireless technology, with applications spanning telecommunications, broadcasting, radar systems, and more. By TT of solid state RF amplifiers to industries, India joined the elite group, where this technology is available to the industry within the country. M/s Technopower International, based in Mumbai, has acquired the license for the RF amplifier module technology.

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