

Nuclear fusion research can be done remotely, Russian university opens special Tokamak facility

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A Center for Remote Participation (CRP), one of the communication modes of the Unified Information Space for Fusion Research created by Rosatom, has been opened at the National Research Nuclear University MEPhI, Russia. The Tokamak "MEPHIST-0" created by the students and employees of the university was also connected to the Unified information space. Tokamak is a device used in nuclear fusion research.

The Unified Information Space for Fusion Research is a unique information network that unites the most important scientific centers of the country engaged in research in the field of controlled thermonuclear fusion. A CRP in a scientific organization connected to a single space provides network participants access to the results of all scientific experiments, and the opportunity to participate in experiments at scientific facilities from a remote place.

The event began with an inspection of the tokamak, and its control room. Stepan Krat, senior researcher at the Institute of Laser and Plasma Technologies at the MEPhI National Research University, explained how those can also be used to conduct experiments at other thermonuclear installations of Rosatom and the Russian Academy of Sciences.



Scientists from Moscow, St. Petersburg, Novosibirsk, and France observed the first remote pulse of a training tokamak in real time. The duration of the experiment was 20 milliseconds, the plasma temperature was 500,000 degrees. The data from the installation was immediately transferred to a single information space.

"We have connected the first training tokamak to the Unified

Information and Communication Space. This will ensure an influx of personnel into research related to thermonuclear reactions," hoped Anatoly Krasilnikov, Director of the Project Center ITER.

"The importance of today's event - the launch of the tokamak - lies in the fact that MEPHI students will have the opportunity from the first year to participate not in words, but in deeds in the implementation of the largest project on a planetary scale," noted Rosatom DG.



Vladimir Shevchenko, Rector, MERPHi noted that it is important to train at the university not only specialists who can operate such installations as Tokamak but also developers who will be able to create fundamentally new fusion devices. In 2017, a group of our students, led by a young employee Stepan Krat, took the initiative to create the

tokamak. The educational spherical Tokamak "MEPHIST-0" at MEPhI will allow scientists from other cities of the country to conduct experiments on the tokamak of MEPhI remotely.

Presently an international nuclear fusion research, engineering mega project- International Thermonuclear Experimental Reactor (ITER) is being implemented in southern France with the participation of many countries including Russia. The project aims at creating energy through a fusion process similar to that of the sun.