Specialists of the MFT and IRE RAS have developed a compact highly sensitive magnetic radiation detector. The device with a thickness of just more than 100 nanometers is able to register weak magnetic fields that generate the brain and heart of a person.

The basis of the detector is a thin film of lutecia grenade and a layer of platinum. Unlike existing analogues, the new device works at room temperature, which opens the prospects for creating portable medical devices.

Development may form the basis of compact and inexpensive devices for magnetic encephalography and cardiography. These methods of diagnosis are more accurate than traditional EEG and ECG, as they record the magnetic component of the organs, and not electric.

Now equipment for such studies requires cooling to ultra -low temperatures, which makes it bulky and expensive. The new detector eliminates this drawback. In addition to medicine, the technology will find use in space communication, radars for drones and quantum electronics.

The device is characterized by supernarial energy consumption and compatibility with silicon technologies. This will create miniature and light modules for various industries on its basis.