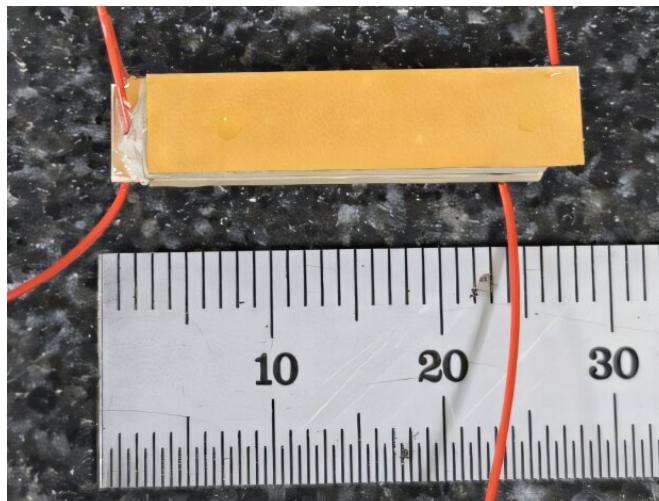


Scientists from DGIST University in South Korea presented a new wireless charging technology for medical implants, operating on the basis of ultrasound. Development allows you to charge batteries of devices inside the body without surgical intervention.

Demand for implanted electronics, such as pacemakers and neurostimulants, is growing rapidly due to aging of the population, an increase in the number of diseases and accidents. However, their batteries need to be changed, which requires regular operations. The new technology solves this problem, transmitting energy outside the body inside, without the need for repeated surgical interventions.

Existing ultrasonic charging methods had restrictions - first of all, by the design of the devices and the level of safe ultrasonic radiation, which did not allow transmitting enough energy. To overcome this, the team developed a new type of piezoelectric converter with a "sandwich structure". It consists of two layers, where the front converts the main part of the energy, and the rear captures residual ultrasound and produces additional power.

The tests showed that the battery with a capacity of 140 mAh can be completely charged in 1 hour 40 minutes, if the device is at a depth of 30 mm under water. In another experiment, after 30 mm pork fabric, the battery of 60 mAh charged in 1 hour 20 minutes. This is at least half the effectiveness of previous developments in this area.



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