Engineers have created millimeter robots that are controlled by magnetic fields

Singaporean researchers have created miniature robots by embedding magnetic microparticles in biocompatible polymers - non-toxic materials, harmless to humans. Robots are programmed to perform specific functions when exposed to magnetic fields.

New miniature NTU robots move 43 times faster than analogues. In addition, they are made from "soft" materials - they float like jellyfish, and are also capable of grabbing, placing and sorting miniature objects.

According to the NTU team, miniature robots about the size of a grain of rice are used for expeditions to confined spaces that are inaccessible to existing robots. It is noted that makes them especially useful in the field of medicine.

Using a jellyfish-inspired robot, scientists have shown how it swims quickly through a tight hole in an obstacle.

Another robot that can grab objects, the researchers assembled a three-dimensional structure.

The operator remotely controls the movements of the robots using the program. It regulates the strength and direction of the magnetic fields generated by the electromagnetic coil system.

Details on how miniature robots work are described in an article for the Advanced Materials magazine.

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