

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ
КАФЕДРА ІНОЗЕМНИХ МОВ
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ
ЦЕНТР**

**МАТЕРІАЛИ
Х ВСЕУКРАЇНСЬКОЇ НАУКОВО-ПРАКТИЧНОЇ
КОНФЕРЕНЦІЇ СТУДЕНТІВ, АСПІРАНТІВ ТА
ВИКЛАДАЧІВ
ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО
ЦЕНТРУ КАФЕДРИ ІНОЗЕМНИХ МОВ**

**“WITH FOREIGN LANGUAGES TO MUTUAL
UNDERSTANDING, BETTER TECHNOLOGIES AND
ECOLOGICALLY SAFER ENVIRONMENT”**

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BRAIN-COMPUTER

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The development of different variants of the interface “brain-computer” (BCI) in recent years ceased to be an experimental direction and finds its practical application. What were the expectations like, what works now and what to expect from this technology in the future?

Methods of recording electrical activity of the brain were developed in 1929 by a German physiologist Hans Berger. Using the interface of “brain-computer” many research teams tried to regain the lost limbs or the ability to move in paralyzed people.

In each of these areas today, there are notable successes, but there are many difficulties in the practical application. The chief among them is the large size of the system, little time offline and multiple wired connections.

In the spring of 2013 they were able to solve many of these problems. The team of scientists managed to create the first wireless interface “brain-computer”. New BCI works from a rechargeable power source. It is differed by long-term use and reliability of signal transmission.

Wireless BCI implementation was successfully tested on pigs and monkeys for more than 13 months. The next step is testing on volunteers.

Electronic of new interface is placed in a hermetically sealed titanium case. It is powered by a lithium-ion battery with an inductive charging circuit. In the current version, the interface is used for one hundred pieces. Researchers have even found time to create and implant a miniature water cooling system for heating the device during charging, so that it did not cause discomfort.

Under another initiative researchers developed a more sophisticated version. It is used to control the motions of their hands called the interface control robotic manipulators “power of thought”.

In the future such application interface “brain-computer” will be able to improve the quality of life of thousands of people. Currently, all of these systems look very clumsy, but getting rid of the wires can significantly improve the usability.