

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ  
ФАКУЛЬТЕТ ІНОЗЕМНОЇ ФІЛОЛОГІЇ  
ТА СОЦІАЛЬНИХ КОМУНІКАЦІЙ**



# **СОЦІАЛЬНО-ГУМАНІТАРНІ АСПЕКТИ РОЗВИТКУ СУЧАСНОГО СУСПІЛЬСТВА**

**МАТЕРІАЛИ ВСЕУКРАЇНСЬКОЇ НАУКОВОЇ КОНФЕРЕНЦІЇ ВИКЛАДАЧІВ,  
АСПІРАНТІВ, СПІВРОБІТНИКІВ ТА СТУДЕНТІВ**

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To describe the transition process we will use three parameters. The value of maximum overshoot. For our result:

$$\sigma_{\max} = \frac{x_m - x_{\infty}}{x_{\infty}} \cdot 100\% = \frac{1.12 - 1}{1} \cdot 100\% = 12\%.$$

– duration  $t_p$  of regulation . For our result:

$$t_p = 0.19 \text{ c.}$$

– number  $N_p$  of oscillations of the controlled variable over time transient. For our result:

$$N_p = 1.$$

Conclusion:

– this method has significant advantages over the known methods of setting PI regulators on quality indicators transients in the system and methods of setting regulator.

– the method is recommended to be used in systems with variable modes, and which put forward stringent requirements for performance and minimize deregulation.

## POWER OF BRAIN

Y. Parkhomenko – *student, group IT – 22*  
(*Sumy State University*)

D.O. Marchenko – *EL Adviser*  
(*Sumy State University*)

Imagine turning on the music and writing a book just through a thought or disabled people who can feel, control their limbs or even communicate with others. We live in the digital age, so there is no surprise that last technology achievements allow us to make science fiction reality.

Brain computer interface (BCI) is one of the most important technological breakthroughs for the last years. It is a tool that sets a direct pathway between the brain and the computer. Its work is based on the reading some specific signals of the brain activity and their transference to

the computer system. BCI can be used in medicine, communication, games, virtual reality, advertising, education, security and other fields. For instance, scientists use a device that produces signals similar to those which are sent when people see the colour. Transferring them into the blind persons brain allows invalids to see again.

The main challenge for today is the placement of electrodes. There are two methods: non – invasive and invasive. The first type lets read information due to a set of electrodes attached to the head, but the skull obstructs the electrical signals transmission. In other case electrodes are put directly inside the users brain or its surface, so we can get better quality and accuracy of signals. The implanted electrodes are left beneath the skull for a long time. This leads to the formation of scar tissue that blocks information. Many researchers are working hard to solve this problem.

Science has taken a step ahead, so new forms of BCI appear. BrainGate developed a wireless device for a remote control of prosthetics and devices for paralyzed people. Another technology is based on brain computer interface principles. It is called brain – to – brain interface. BBI is a “digital telepathy” and works by sending signals directly from one brain to another. One more important achievement is mechanism for half – paralyzed persons. Instead of a robotic hand it sends signals to move their own limbs bypassing damaged sections of nerves. As a result people can again interact with the environment themselves.

Thanks to the researches of BCI we can use a huge power and potential of our brain. It is a perspective technology that opens the door in advancing such areas as communication and control, smart environment and entertainment, medicine and security. Despite all benefits it is a field for further improvements and developments.

## **THEORETICAL DESCRIPTION OF PROJECT MANAGEMENT DIVERSIFICATION RESOURCES**

I.A. Miroshnikova, *ASP-52 tech*  
(*Sumy State University*),  
A.M. Diadechko, *ELA*  
(*Sumy State University*)

Global non-linear changes, including the persistent deep economic recession in many countries in the world after Lemman Brother’s collapse in 2008 are forcing a structural change in the economy (especially, real estate development projects), including the shift from one-time aggressive (or