

Title: Bioelectronic medicine as the renaissance of autonomic neurophysiology
(Биоэлектронная медицина как возрождение вегетативной нейрофизиологии)

Abstract.

In two years of its existence, Galvani Bioelectronics has been developing the new field of Bioelectronic Medicine, which alongside pharmaceuticals and vaccines aims to treat a wide range of chronic diseases by modulating the signalling in autonomic nerves (Nat Rev Drug Discov. 2014 13(6):399-400). To achieve that goal, we are developing miniaturised implantable wirelessly-powered devices to enable exploration of the disease pathophysiology and the effect of electrical modulation therapy. We collaborate with an extensive network of world-leading academic institutions and medical device companies. During the talk, I will describe the implantable devices for exploring the disease pathophysiology and some examples of the emerging therapies.

Presenter: Dr. Victor Píkov (Виктор Пиков)



For the past three years at Galvani Bioelectronics and GSK Bioelectronics division, Victor Píkov has led the development of Research Platforms and Tools, focusing on wirelessly-powered implantable devices and cuff electrodes for interfacing with the nerves to enable preclinical and clinical research on nerve stimulation and recording by our internal team and a large network of our academic partners. Prior to Galvani Bioelectronics, while at the Huntington Medical Research Institutes (2002-2015), he evaluated various PNS and CNS neural interfaces in various models of chronic diseases, such as infertility, bladder paralysis, bladder spasticity/hyperreflexia, hearing and vision loss, tinnitus, obstructive sleep apnea, and obesity. His PhD work at Georgetown University (1995-2000) was on the spinal control of bladder voiding and postdoctoral work at the California Institute of Technology (2000-2002) was on optogenetic viral vectors for neuronal stimulation. Victor holds patent applications for non-invasive glucose measurement in the skin, neuromodulation for polycystic ovarian syndrome, and a microfluidic nerve cuff interface.