



“NerveRepack: Intelligent neural system for bidirectional connection with exoprostheses and exoskeletons” (Acronym: NerveRepack)

Το Εθνικό Ίδρυμα Ερευνών συμμετέχει στο έργο “NerveRepack: Intelligent neural system for bidirectional connection with exoprostheses and exoskeletons” (Ακρωνύμιο: NerveRepack), το οποίο κατατάχθηκε στην 1η θέση με βαθμολογία 14,6/15,0. Το έργο NerveRepack έχει λάβει χρηματοδότηση στο πλαίσιο των δράσεων HORIZON Europe (Grant Agreement no. 101112347).

Πρόκειται για ένα ρηξικέλευθο ερευνητικό έργο 4 ετών, που στοχεύει στην ανάπτυξη μιας νέας γενιάς αμφίδρομων εμφυτευμένων ηλεκτροδίων, συνδέοντας το ανθρώπινο νευρικό σύστημα με εξωτερικές μηχανικές συσκευές βοήθειας (όπως οι εξωσκελετοί και οι εξωπροσθέσεις), προκειμένου να ανακτηθούν οι κινητικές και αισθητηριακές λειτουργίες ατόμων με παράλυση κάτω άκρων ή ακρωτηριασμό άνω άκρων.

Ιστοσελίδα έργου: <https://www.nerverepack.eu/>

The National Hellenic Research Foundation participates in the project “NerveRepack: Intelligent neural system for bidirectional connection with exoprostheses and exoskeletons” (Acronym: NerveRepack), ranked first with a score of 14.6/15.0. NerveRepack has received funding from the European Union’s HORIZON Europe research and innovation programme under grant agreement No 101112347, Key Digital Technologies Joint Undertaking (KDT JU), Research and Innovation Actions (RIA).

This is a 4-year disruptive project that aims to develop a new generation of bidirectional implantable electrodes connecting the human nervous system with external mechatronic aid devices such as exoskeletons and exoprostheses, thus helping people with arm amputations or leg paralysis regain their motor and sensorial functions. This new generation of exoprostheses and exoskeletons controlled by the



patient's brain via the nervous system will change the paradigm of support for people with disabilities and will have an important social, economic, medical, and technological impact on our society. The technology advances including miniaturization, wireless communication and power supply, progresses in medical microsurgery tools and methods, new biocompatible materials and technologies will considerably contribute to the project implementation.

The project kicked off on the 1st of June 2023. The NerveRepack consortium is led by The National Institute for R&D in Microtechnologies (IMT) in Bucharest and is made up of major European research institutes, public and private enterprises, plus highly respected universities – all focusing on biomedical research and innovation. These 27 high-profile partners from 10 European countries integrate members from research and industry and with a broad range of expertise.

NHRF brings in its state-of-the-art knowledge, infrastructure, and expertise on a. 3D cell culture models to map cell microenvironment and cell responses, b. biocompatibility wet/dry lab pipelines for optimum design and performance and c. computational/biomechanical modelling and simulations.

Project website: <https://www.nerverepack.eu/>