



The National R&D Institute for Microtechnologies in Bucharest leads EU-funded consortium to build a new generation of implantable neural interfaces

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The National Institute for Research and Development in Microtechnologies (**IMT**) **Bucharest** has obtained funding for the development of a new generation of implantable devices for prostheses, which will change the paradigm of support for people with disabilities and will have an important social, economic, medical, and technological impact.

The **NerveRepack** project will develop a new generation of bidirectional implantable electrodes connecting the human nervous system with external mechatronic aid devices such as exoskeletons and exoprostheses. The new exoprostheses and exoskeletons controlled by the patient's brain via the nervous system will help people with arm amputations or leg paralyses to regain their motor and sensorial functions.

Electrodes will be the primary bidirectional interface to the nerves, followed by the implantable electronics module. All the components will be designed, fabricated, and tested through demonstrators aimed at different categories of patients: with forearm amputation or with lower limbs paralysis.

*"The NerveRepack project was created to answer an urgent need to help the people with severe nerve damage affecting their upper or lower limb", said **Dr. Carmen Moldovan**, the project coordinator. "These people suffer amputations or paralysis and their abilities to move, to work, to take care of themselves are severely diminished or lost. **NerveRepack** will have a significant impact on people quality of life and health", she added.*

The **NerveRepack** consortium led by **IMT** and funded through the **Key Digital Technologies Joint Undertaking (KDT-JU)** programme 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** include Politehnica and Carol Davila Universities in Bucharest, Areus Technology and Osteopharm (Romania), Fraunhofer IZM and Chemnitzer Werkstoffmechanik (Germany), University of South-Eastern Norway and Zimmer & Peacock (Norway), Politecnico di Torino, PBL and Omnidermal (Italy), TU Delft, imec and Salvia Bioelectronics (The Netherlands), Patras and Thessaly Universities, National Hellenic Research Foundation and Ostracon (Greece), INEGI and Adtechnologies (Portugal), Lukasiewicz - Lodz Institute of Technology (Poland), ABLE Human Motion (Spain), Swistor, PROUD and Empa (Switzerland).

The **Key Digital Technologies Joint Undertaking** - the Public-Private Partnership for research, development and innovation – funds projects for assuring world-class expertise in these key enabling technologies, essential for Europe's competitive leadership in the era of the digital economy.

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