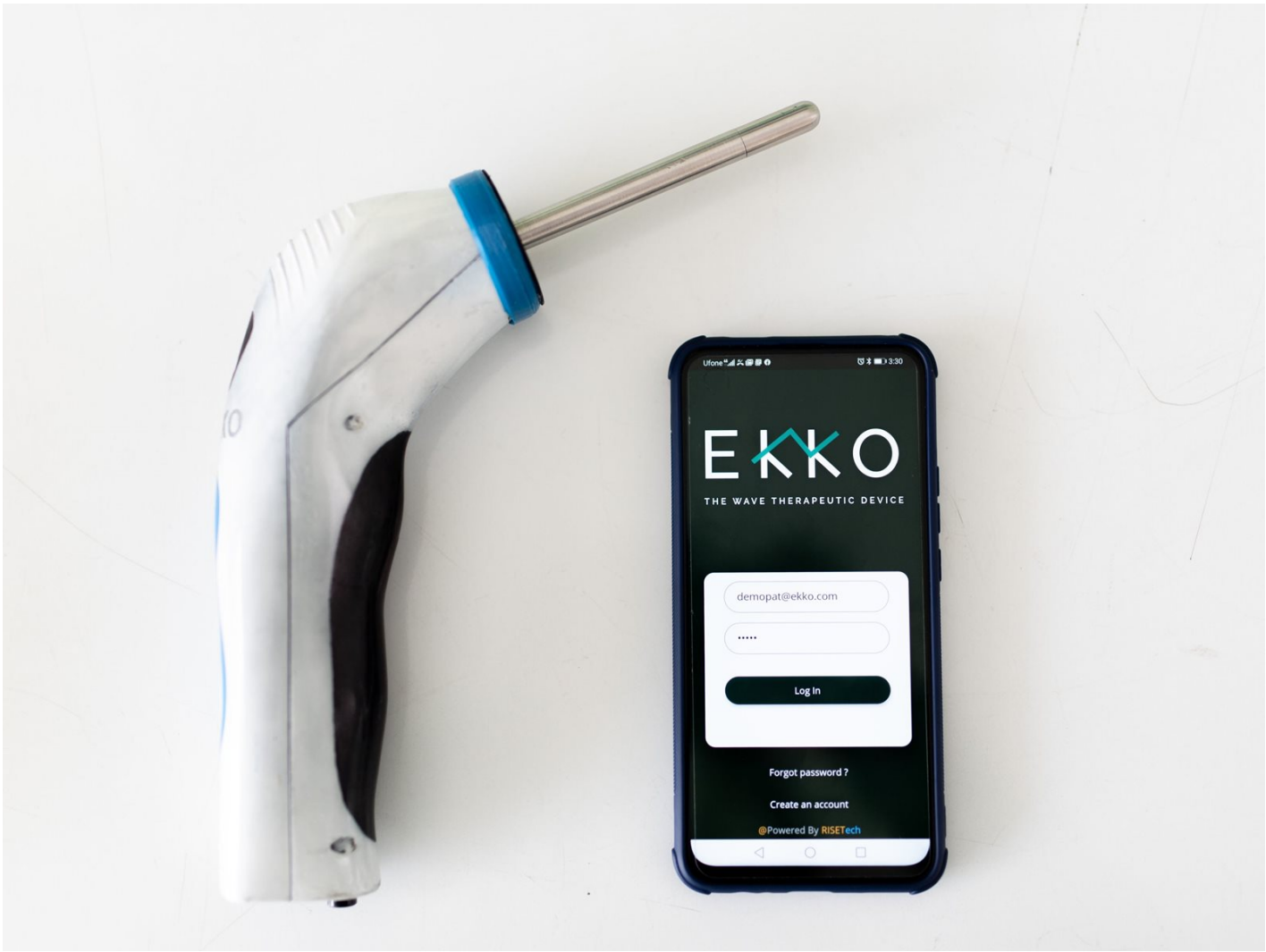
Low-Frequency Vibration Device Provides Non-Invasive, Mobile Therapy To Those In Need

National University of Science and Technology



According to the World Health Organization, more than 1 billion people throughout the world are affected by some type of neurological disease. Nearly 7 million people die every year as the result of a neurological disorder.

A team of biomedical researchers from the National University of Science and Technology (NUST) in Pakistan, led by Dr. Muhammad Usman Akram and supported by a grant from the Higher Education Commission (HEC), made a valuable addition to the growing number of treatments for neurodegenerative disorders with the invention of the EKKO Wave Therapeutic Device (EKKO).

The EKKO is a non-invasive, mobile therapy that takes concepts used for treatment of muscles and applies them to the brain. Vibrational waves aid in the fast recovery of muscles because of their resonance with the natural frequencies of the muscle fibers. In recent years, these waves also have been shown to affect neural activity, which can help in the

treatment of neural diseases.

The EKKO improves patient access to treatment for symptoms like tongue dysarthria, motor speech aphasia/dysphasia, tongue apraxia, cerebral palsy and eye squints. Two versions of the technology are available: the EKKO-Clinic for clinics, therapy centers and hospitals, and a portable, app-based version for home use.

After presentations at various scientific conferences, including Falling Walls in Berlin, Imagine Cup in Amsterdam, and MEDICA in Düsseldorf, NUST filed for protection of the intellectual property associated with the device.

The NUST Technology Transfer Office worked with various departments and stakeholders from the kick-off of the project to the successful pilot testing of the device, which was licensed to M/S RiseTech for commercialization.

The team of innovators includes Dr. Sajid Gul Khawaja and Dr. Muhammad Usman Akram from NUST's College of Electrical and Mechanical Engineering. The device is built on Neurotransmission Cognitive Theory, which was developed by Shahbaz Khalid, a well-known speech therapist and psychologist.

The EKKO Wave was the winner of the 2023 Better World Project Award. The annual Better World Project Award honors the exemplary work of one technology transfer office from the stories submitted during the previous year.

"Taking EKKO from a very basic concept to an actual product being used by multiple families and those who are in need, is a matter of great satisfaction," said Mehfooz Ahmed, General Manager, Technology Transfer, in the Innovation & Commercialization Office at NUST. "We feel honored to have won this prestigious Better World competition, which provided us with a platform to make a humble contribution as part of global efforts to foster a disability-free society with our product EKKO."

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