1	CEIPEX RESEARCH TOPIC LEVEL2: bioelectronics materials and devices
2	RESEARCH GROUP: **Bioelectronics Materials and Devices (E. Glowacki)**
3	TOPICS/FOCUS: **Exploring High-Frequency Electrical Neurostimulation Beyond Classical Mechanisms**
4	SUMMARY: We are seeking a motivated postdoctoral researcher to join our interdisciplinary team at the Bioelectronics Materials and Devices Laboratory, Brno University of Technology. Our research focuses on high-frequency electrical neurostimulation, specifically using unconventional waveforms in the kilohertz-to-megahertz (kHz–MHz) range. The central goal is to investigate how these atypical frequencies can influence neuronal function through non-classical biophysical mechanisms, potentially operating beyond standard membrane depolarization. This is a fundamental scientific question with significant implications for future bioelectronic therapies and neural interfacing technologies. We offer a flexible and multidisciplinary research environment, with opportunities to work across several experimental and theoretical platforms: Computational modeling of neuronal responses to high-frequency fields; In vitro electrophysiology, including patch clamp and multielectrode arrays; Experiments on model organisms (e.g. invertebrate nervous systems); Noninvasive human studies, with access to stimulation and recording equipment. The project benefits from strong collaborative ties with neuroscience groups at the CEITEC campus of Masaryk University (MUNI), enabling joint experiments and access to complementary infrastructure across Brno's leading research institutions. A successful fellowship project may thus span both campuses.
5	RG WEBPAGE/CONTACT: https://www.ceitec.eu/bioelectronics-materials-and-devices/rg375