Wireless brain stimulation

Neuromodulation is a technique that changes neural activity by delivering electrical impulses to the brain for therapeutic benefit in patients with neurologic or psychiatric disorders. Therapies include both invasive and non-invasive approaches. Funded by the European Innovation Council, the BRAINSTORM project proposes to develop a new technology that can excite or inhibit neurons in the brain wirelessly, in a non-invasive manner. The technology relies on magnetic nanomaterials and combines thermal, mechanical, and electrical modalities that deliver relevant stimuli to brain...
neurons. The efficacy of the approach will be demonstrated in a mouse model of Fragile X syndrome, a genetic disorder associated with learning and cognitive disabilities.

**Fields of science**

- natural sciences > chemical sciences > **polymer sciences**
- engineering and technology > medical engineering > diagnostic imaging > **magnetic resonance imaging**
- engineering and technology > nanotechnology > **nano-materials**
- engineering and technology > electrical engineering, electronic engineering, information engineering > information engineering > telecommunications > **radio technology**
- natural sciences > physical sciences > acoustics > **ultrasound**

**Keywords**

- Advanced Functional Nanomaterials
- Biomaterials Engineering
- Smart and Responsive Polymer Coatings
- Targeted Neuromodulation
- Wireless Stimulation

**Programme(s)**

- HORIZON.3.1 - The European Innovation Council (EIC)

**Topic(s)**

- HORIZON-EIC-2022-PATHFINDEROPEN-01-01 - EIC Pathfinder Open 2022

**Call for proposal**

- HORIZON-EIC-2022-PATHFINDEROPEN-01

*See other projects for this call*
Funding Scheme

**EIC - EIC**

**Coordinator**

**FRIEDRICH-ALEXANDER-UNIVERSITAET ERLANGEN-NUERNBERG**

Net EU contribution

€ 740 000,00

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Region

Bayern > Mittelfranken > Erlangen, Kreisfreie Stadt

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation
Website
Participation in EU R&I programmes
HORIZON collaboration network

Other funding

€ 0,00

**Participants (4)**

**UNIVERSITA DEGLI STUDI DI ROMA TOR VERGATA**

Net EU contribution

€ 604 750,00

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ASOCIACION CENTRO DE INVESTIGACION COOPERATIVA EN BIOMATERIALES- CIC biomaGUNE

Spain

Net EU contribution

€ 579 350,00

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Region

Noreste > País Vasco > Gipuzkoa

Activity type

Research Organisations

PERCUROS BV

Netherlands

Net EU contribution

€ 300 000,00

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Yes

Region
West-Nederland > Zuid-Holland > Agglomeratie 's-Gravenhage

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network

Other funding
€ 0,00

VALO THERAPEUTICS OY
Finland
Net EU contribution
€ 300 000,00

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SME
Yes

Region
Manner-Suomi > Helsinki-Uusimaa > Helsinki-Uusimaa

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
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Other funding
€ 0,00

Partners (1)
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Links
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Other funding
€ 0,00
EC signature date 8 December 2022
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European Union, 2023