



A Minimally Invasive, Injectable Wireless Implant for Smart Brain Monitoring

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Introducing Neufi

Neufi – founded by academic neurotechnologists with 40+ years of device development and translation experience

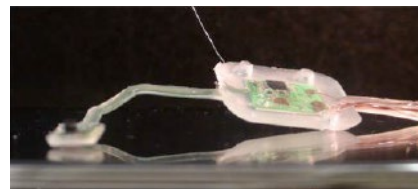
Aim: Develop a Brain Monitoring Platform

- *Accessible*
- *Affordable*
- *Minimally invasive*
- *Wireless*

Benefit : Diagnosis and Management

- *Neurological Diseases*
- *Cognitive Decline*
- *Behavioral Disorders*

— — prior technologies developed by our team — —



BRAIN-IMPLANTABLE CHIP (BIC)



BROWN WIRELESS
DEVICE (BWD)

EEG As A Biomarker For Neurological Disease

Integrative EEG biomarkers predict progression to **Alzheimer's** disease at the MCI stage

VU, Netherlands

The neurobiology of the EEG biomarker as a predictor of treatment response in **depression**

Kings U, Canada

EEG microstates as biomarker for **psychosis in ultra-high-risk patients**

U Lubeck, Germany

EEG based Major Depressive disorder and **Bipolar disorder** detection using Neural Networks: A review

COMSATS, Pakistan

Longitudinal EEG power in the first postnatal year differentiates **autism outcomes**

Harvard U, USA

The Clinical Role of Computerized EEG in the Evaluation and Treatment of **Learning and Attention Disorders** in Children and Adolescents

NYU, USA

Longitudinal EEG is a TRANSFORMATIVE global market opportunity for diagnostic and closed-loop therapeutics

The Need For Smart Neuromonitoring

The case for Subcutaneous injectable wireless EEG

- *Epilepsy surgery planning* ***\$1.03 Billion***
- *Long-term epilepsy Monitoring* ***\$560 Million***
- *Pharmaco-EEG for AEDs* ***\$7.1 Billion***
- *Dementias* ***\$40 Billion***
- *Psychiatric Diseases* ***\$59 Billion***
- *And more....*

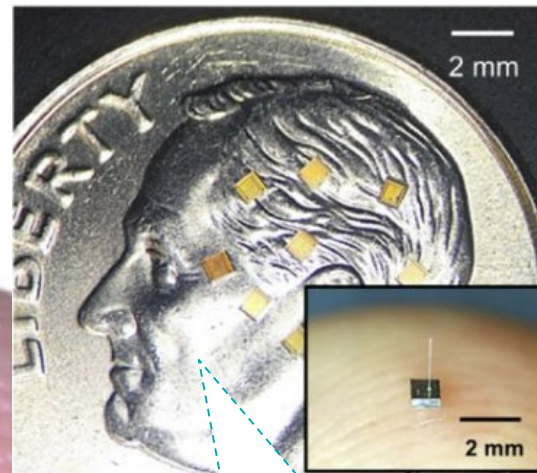
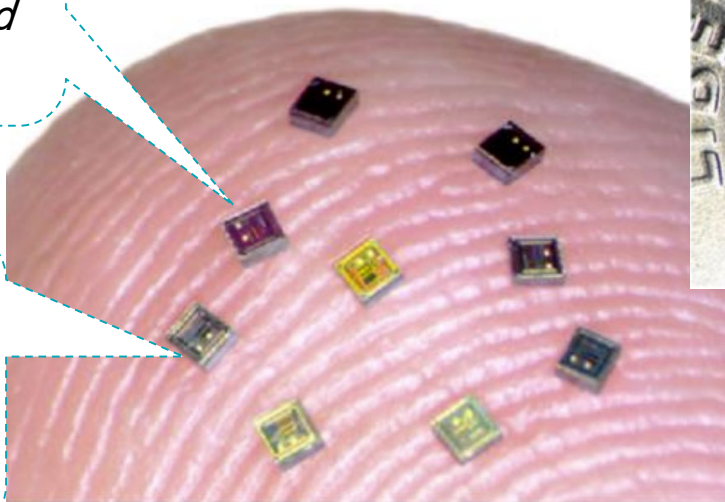


Our Solution: Microscale Implantable Systems-on-Chip

Apply cutting-edge integrated wireless electronic technology to the chronic minimally - invasive monitoring problem

*Ultra-miniaturized
(sub-millimeter)
custom Integrated
Circuits (ASICs)*

*Wireless Power &
Communications to
form networks with
thousands of
devices per subject*

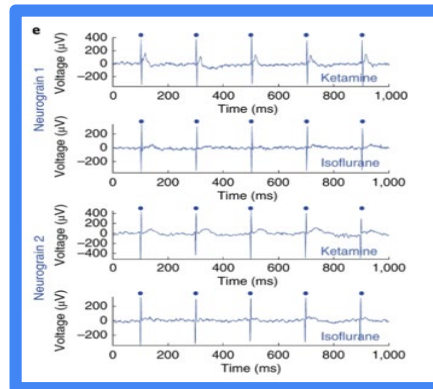


*Thin-film hermetic
packaging for
biocompatibility*

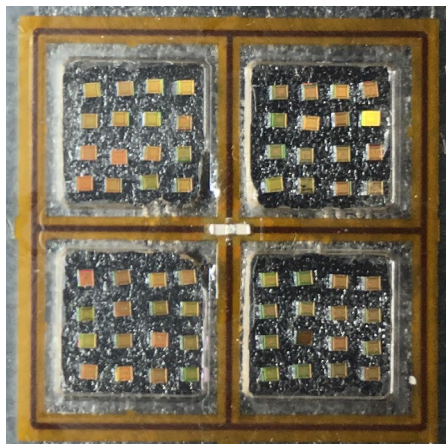
Neurograins Technology

- *Brain Monitoring/Actuation*
- *0.5 mm x 0.5 mm devices*
- *10 Mbps bidirectional wireless communication*
- *Networked capacity upto 1000 devices*
- *IP filed (3 patents pending)*

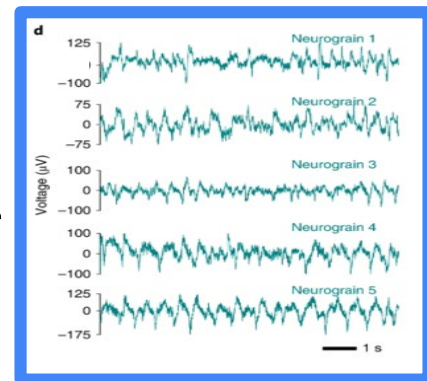
**PATTERNED
MICROSTIMULATION**



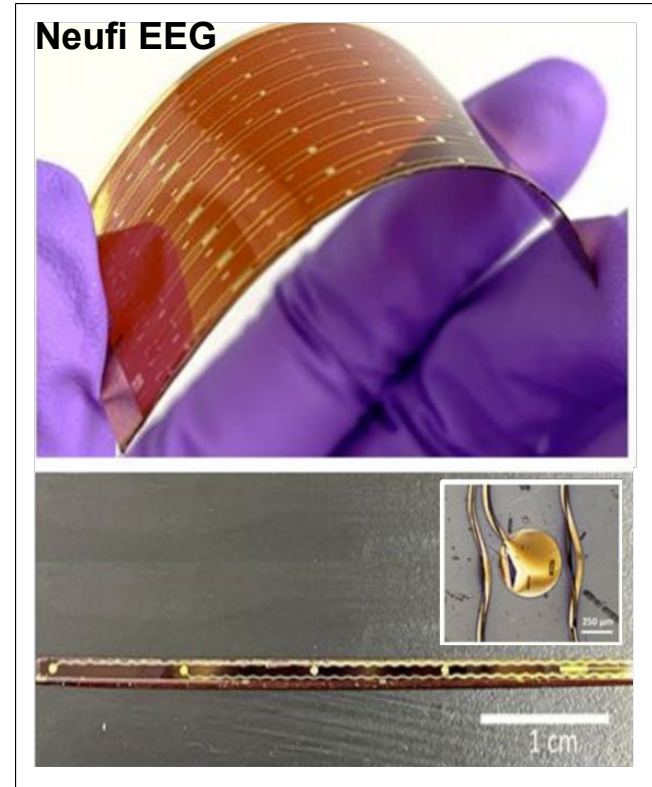
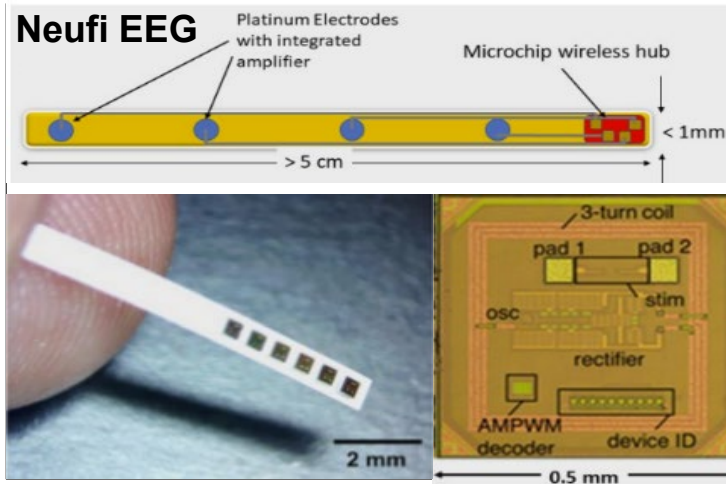
GRAIN ENSEMBLES



**EPICORTICAL
NEURAL
RECORDING**



Creating The Future– SubQ Injectable EEG Threads



The Neufi Team

Farah Laiwalla,
MD PhD



Arto Nurmikko, PhD



Ah-Hyoung Lee, PhD



Jihun Lee, PhD



➤ *Co-founders (Engineers)*

➤ *Ongoing recruitment Business expertise and Board members (Clinicians)*

The Road Ahead

- Build an implantable prototype for animal and clinical validation
- Initiate Regulatory Approvals (likely 510k)
- **Timeline for EEG: 36 months @ \$1M/year**
 - Personnel
 - Design and Nanofabrication for integration and packaging
 - Animal testing
 - Safety and Efficacy testing

The Next Revolution?

SMART WIRELESS MICROIMPLANTABLES are going to be the next major revolution in healthcare, and Neufi can be the leader

We would love to hear from you!

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