



STRETCHING INNOVATION



## Other biomedical applications of stretchable nanocomposites

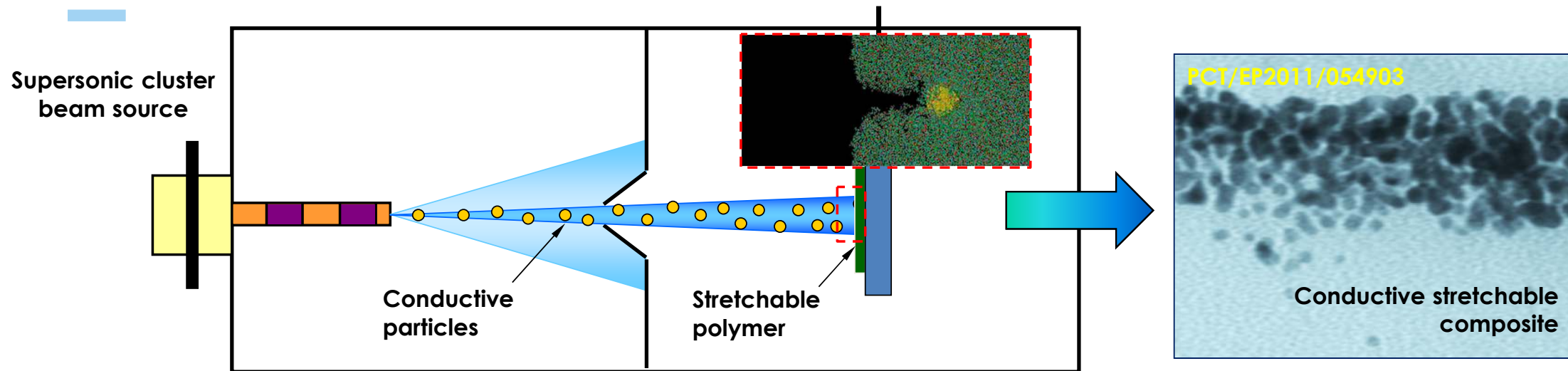
15 Ottobre 2021

Luca Ravagnan  
CEO

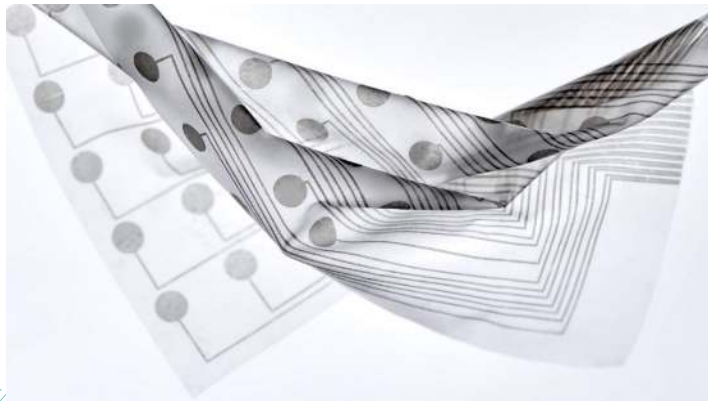
[wiseneuro.com](http://wiseneuro.com)



# The WISE's Supersonic Technology – SCBI



- Unrivalled stretchability
- Strain sensing
- Easy manufacturing
- Arbitrarily soft & thin
- Any shape, any size
- Curved surfaces / Balloons
- Biocompatible (ISO 10993-1:2009)



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# The unsolved Medical need of Neuro-leads

Soft Neuro-tissue



Hard Neuro-leads



**Huge mechanical mismatch**

Today  
Neuro-leads Market  
exceeds \$600M



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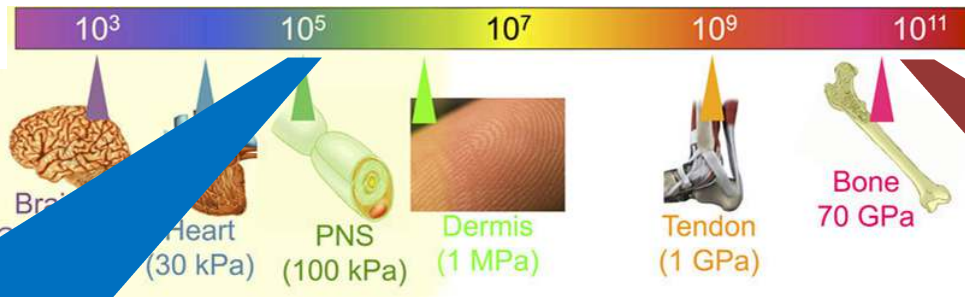


# The unsolved Medical need of Neuro-leads

## Soft Neuro-tissue



Young's modulus



Soft elastomeric conductor

The SCBI closes the gap

## Hard Neuro-leads



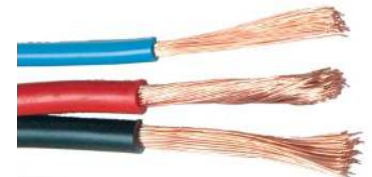
Hard metal conductor



Proprietary technology

4 patent families,  
core IP granted in EU, USA, JP, KR, IL, CA

- Reduces INVASIVITY
- Increases CONFORMABILITY
- Allows NEW GEOMETRIES



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# The Neuro-leads Scenario

## Neuromonitoring Electrodes (IONM & iEEG)



## Neuromodulation Leads (SCS, DBS)



## Neuromonitoring applications:

- ❑ **Monitoring during surgery (IONM)**
- ❑ Identification of epileptogenic zones (iEEG)

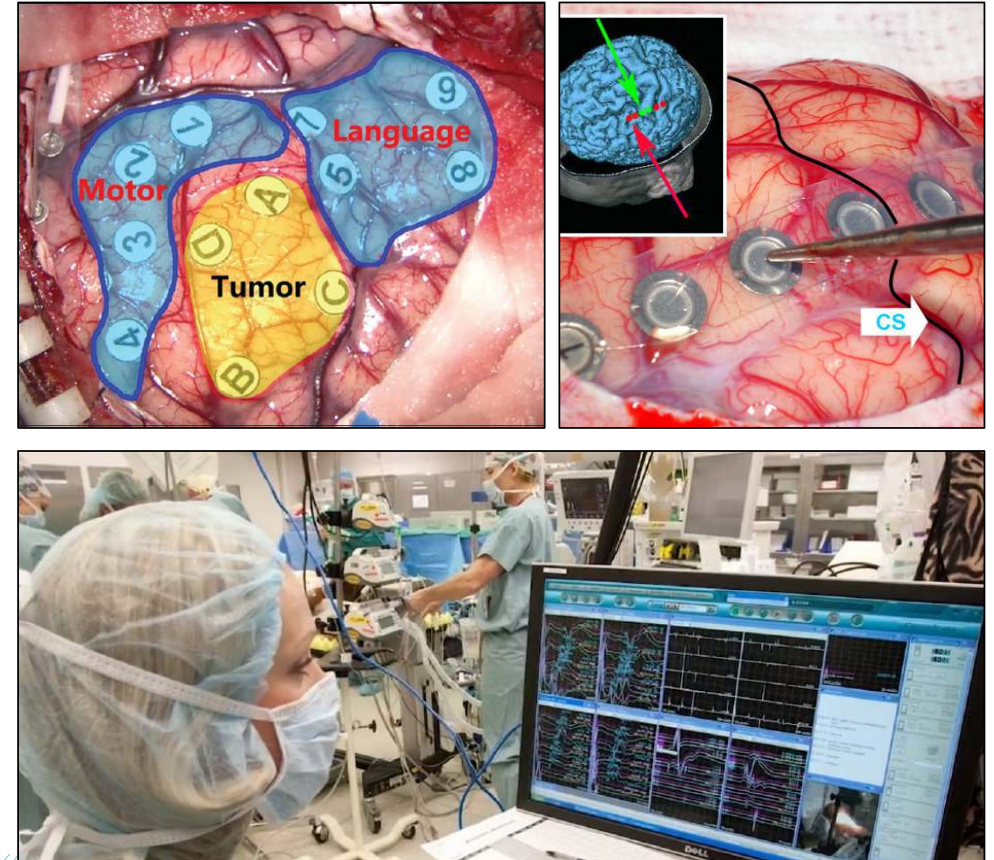
## Neuromodulation therapies:

- ❑ **Chronic pain (SCS)**
- ❑ Parkinson's disease
- ❑ Epilepsy
- ❑ and many others ...

# Cortical Strips for IONM: Overview

Cortical Strips are used on the brain surface for **stimulating the brain or recording the brain's electrical activity**.

- ❑ **Intraoperative Neuromonitoring (IONM):**  
Monitoring the functional integrity of neural structures during **brain surgery** (tumor or epilepsy)
- ❑ **Single-use**
- ❑ **+50M\$ Existing Market**, Market Potential for Brain Tumors 500M\$



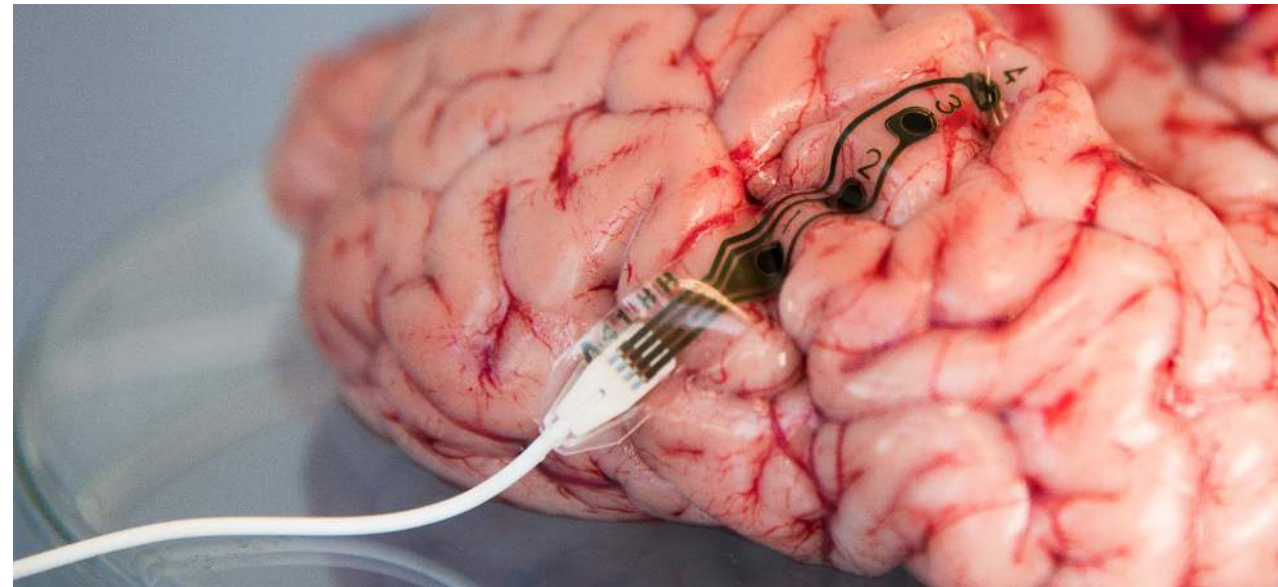


# WISE Cortical Strip – WCS®



**Wise Cortical Strip (WCS®)** is used for the **recording, monitoring and stimulation of electrical signal on the surface level of the brain.**

It supports monitoring during brain tumor resection.



- » Highly ergonomic
- » Conformable
- » Soft and Thin
- » Superior adhesion
- » Excellent adaptability

# WCS® vs. Commercial

## The Past



## The **WISE** future



*Test performed on an explanted bovine brain*

**Better contact to the brain**



**Improving the reliability of  
intraoperative Neuromonitoring**

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# The WIN Study

PROTOCOL TITLE	Wise Cortical Strip for Intraoperative Neurophysiological Monitoring (WIN Study)
OBJECTIVE	To confirm safety, performance and intended use of the Wise Cortical Strip (WCS®) during intraoperative neurophysiological monitoring (IONM) in patients with diagnosis of brain tumor or epilepsy for CE certification purposes.
DESIGN	Prospective, interventional, multi-center, open-label, premarket study.
POPULATION	32 adult patients

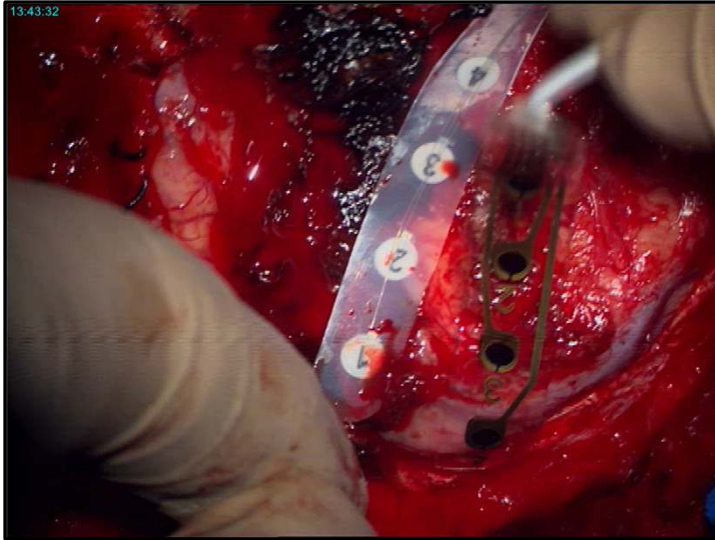
INVESTIGATION  
SITES

Country	Clinical Center
Germany	Ludwig-Maximilians-University, Munich, Germany
	Universitätsspital Zürich, Zürich, Switzerland
Switzerland	Kantonsspital Luzern, Luzern, Switzerland
	Inselspital Bern, Bern, Switzerland
Italy	Verona University Hospital, Verona, Italy

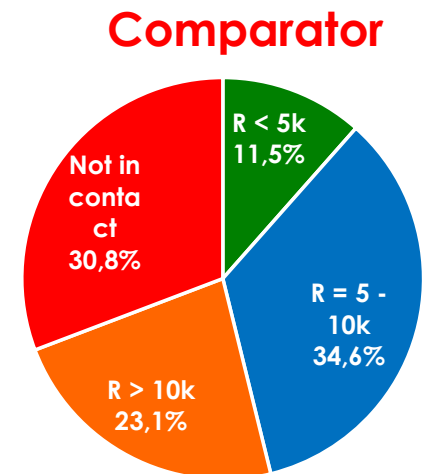
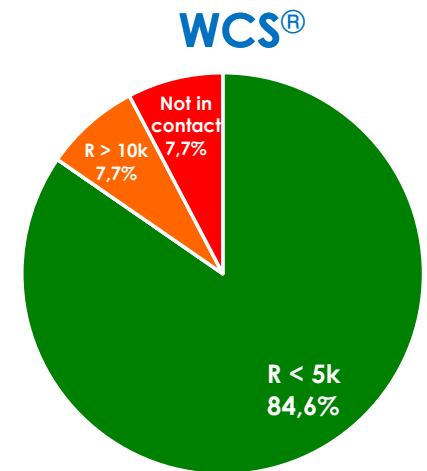
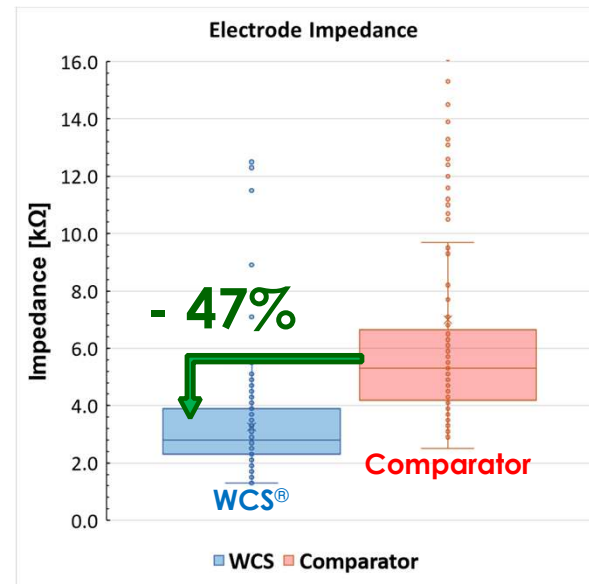
ClinicalTrials.gov  
Study Identifier: NCT03731455

➤ Study successfully concluded

# WIN Study Highlights – Primary Outcomes



- 32 patients treated
- 47% less impedance compared to Comparator
- 8 times better adhesion compared to Comparator
- 0% Device Related AE compared to Comparator reports





# WISE's cutting-edge cortical neuromonitoring electrode receives CE mark

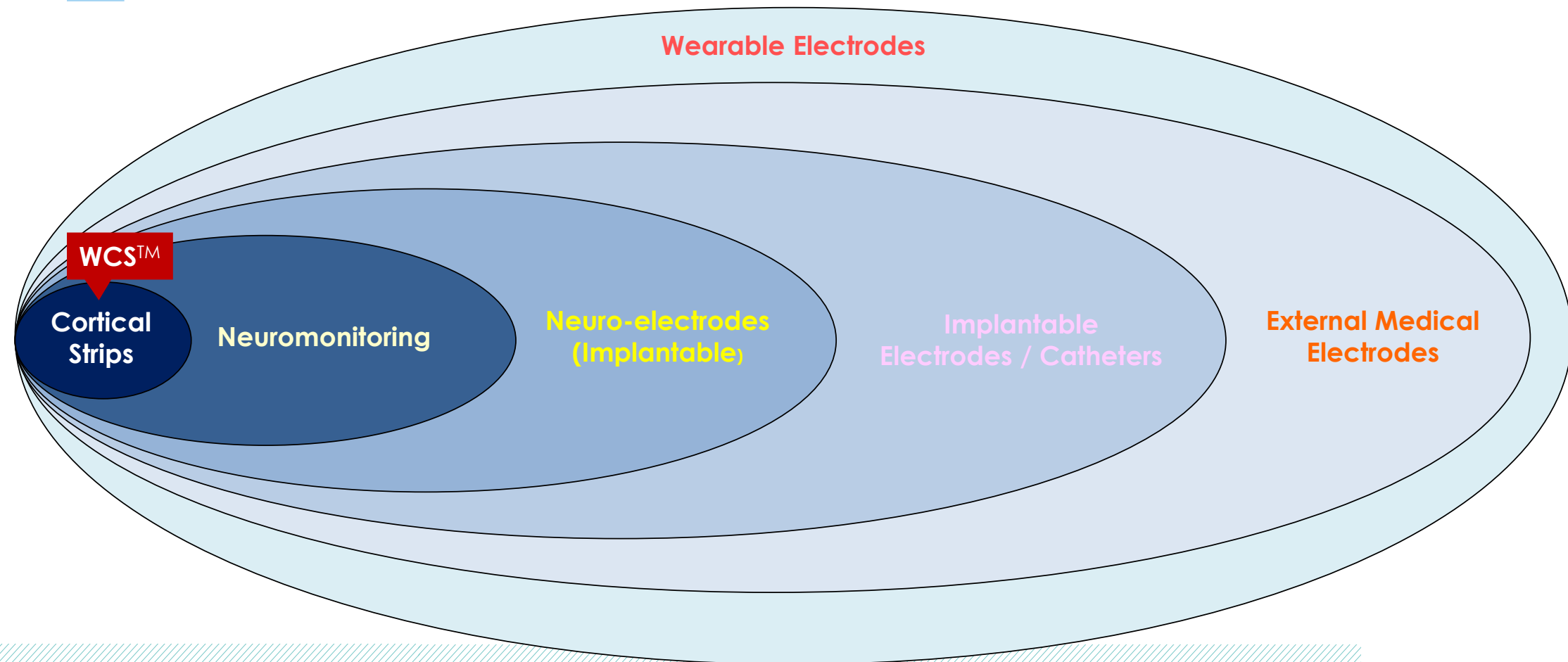
18.05.2021



[wiseneuro.com](http://wiseneuro.com)



# From Neuro to Medtech to Wearable Electronics



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# WISE's Team & Investors

## Luca Ravagnan, PhD MBA

CEO & Founder



- Developed and patented the SCBI technology
- Nanotechnology
- Business Administration & Strategy
- **Endeavor Entrepreneur**

## Sandro Ferrari, PhD

Director of Operations



- 15y experience in Materials Technology Industry
- Biomaterials Engineering
- Project Manager IPMA

## Giulia Salzano

Director of Administration & Finance



- 15y experience in Administration Management & Grants
- Innovation & Knowledge Transfer MSc

## Thomas Bianchi

Business Development



- 20+y experience in Sales & Marketing leadership:  
**Medtronic International, Stryker Europe, Covidien EMEA, Autonomic Technologies Inc. and SBG Lifesciences**



## WISE Team:

- 24 operatives, 50% women, 83% graduated, 29% PhD or Master level

## WISE Investors:

- €26 million invested



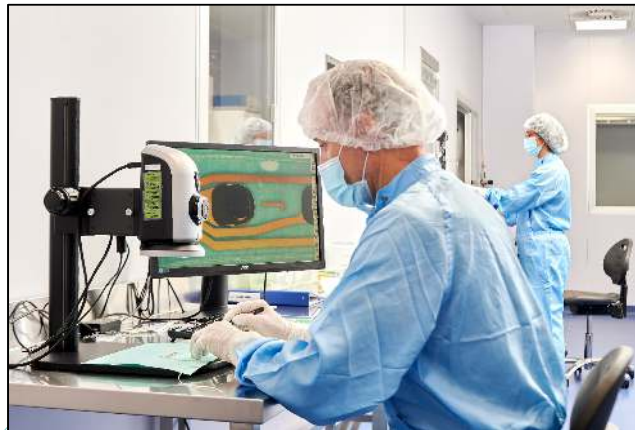
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# WISE's Factory

## Italian headquarter:

- 1500 m<sup>2</sup> facility
- Offices, Labs and Production
- 120 m<sup>2</sup> ISO7 cleanrooms



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**For any further information,  
please contact:**

**Luca Ravagnan**  
CEO

E: [luca.ravagnan@wiseneuro.com](mailto:luca.ravagnan@wiseneuro.com)  
T: +39 0284962910  
M: +39 3337657189

**[www.wiseneuro.com](http://www.wiseneuro.com)**

