



# FORESEE BIOSYSTEMS

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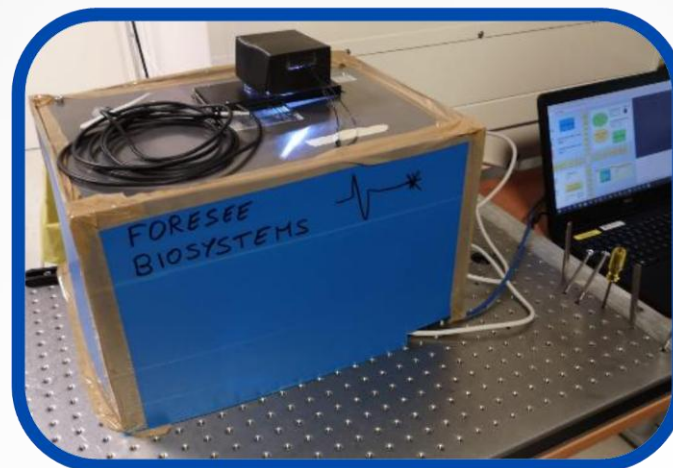
# ABOUT OUR COMPANY

Foresee Biosystems operates from Genoa, Italy, since 2021. It was established by researchers of the Italian Institute of Technology (IIT).

Foresee is a high-tech company developing and selling products and services in the field **of in vitro cell screenings**.







2021



2022



2023

# COMPANY HISTORY

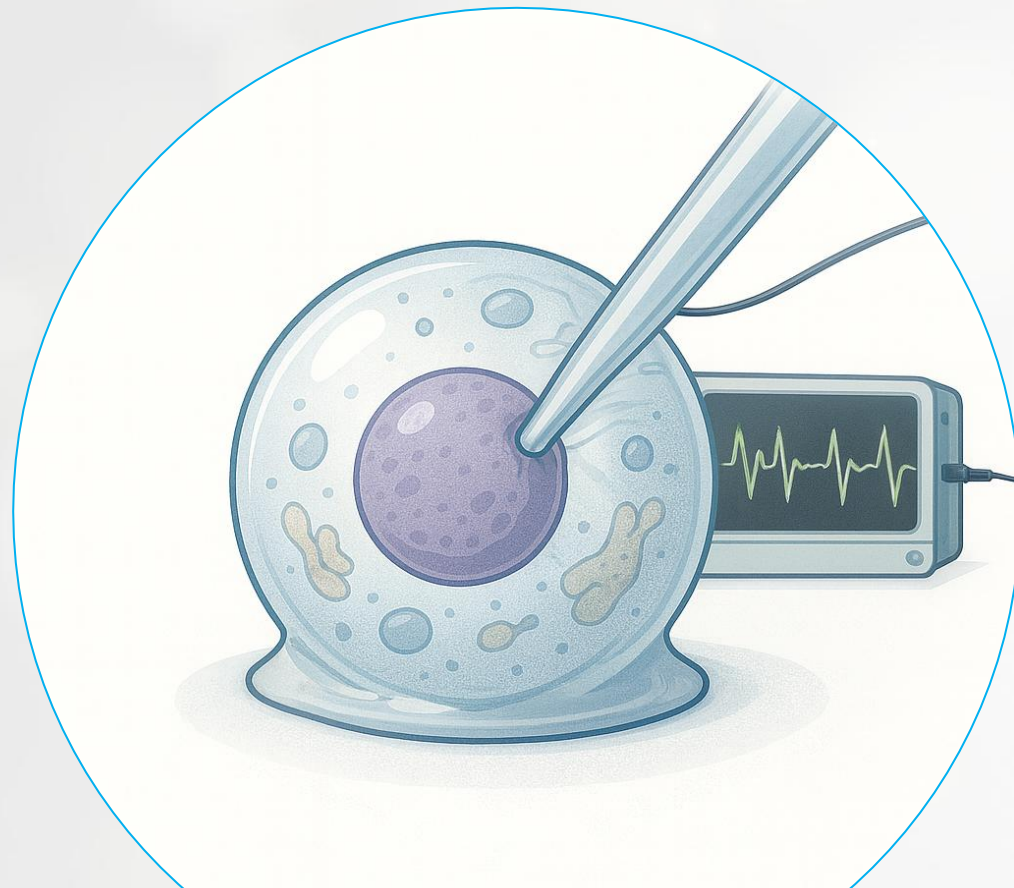
The unique laser technology of Foresee was developed at the Italian Institute of Technology (IIT) in Genova, Italy. IIT patented the technology in 2018.

Foresee acquired the exclusive rights of the patent in 2021, and developed its first product, IntraCell, from 2021 to 2023.

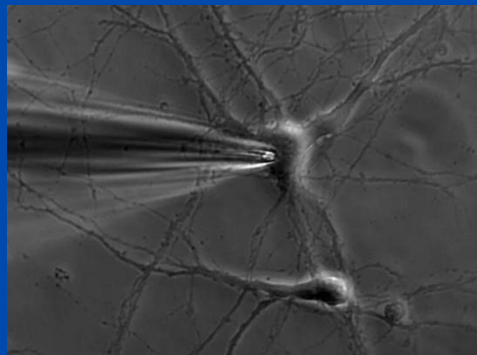


# THE TECHNOLOGY

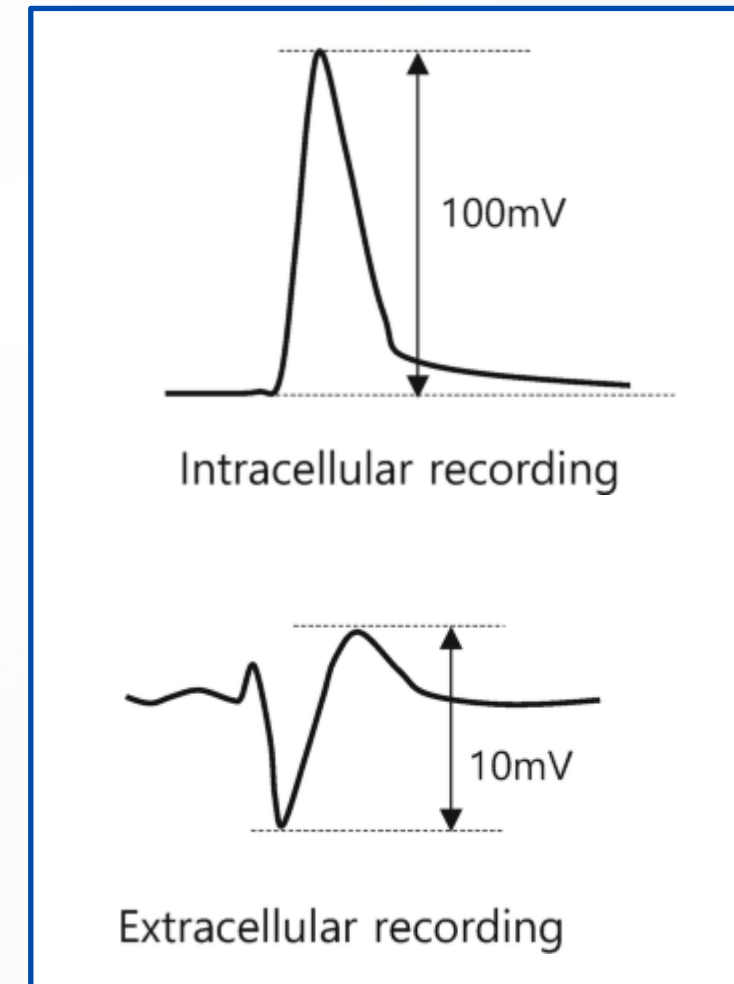
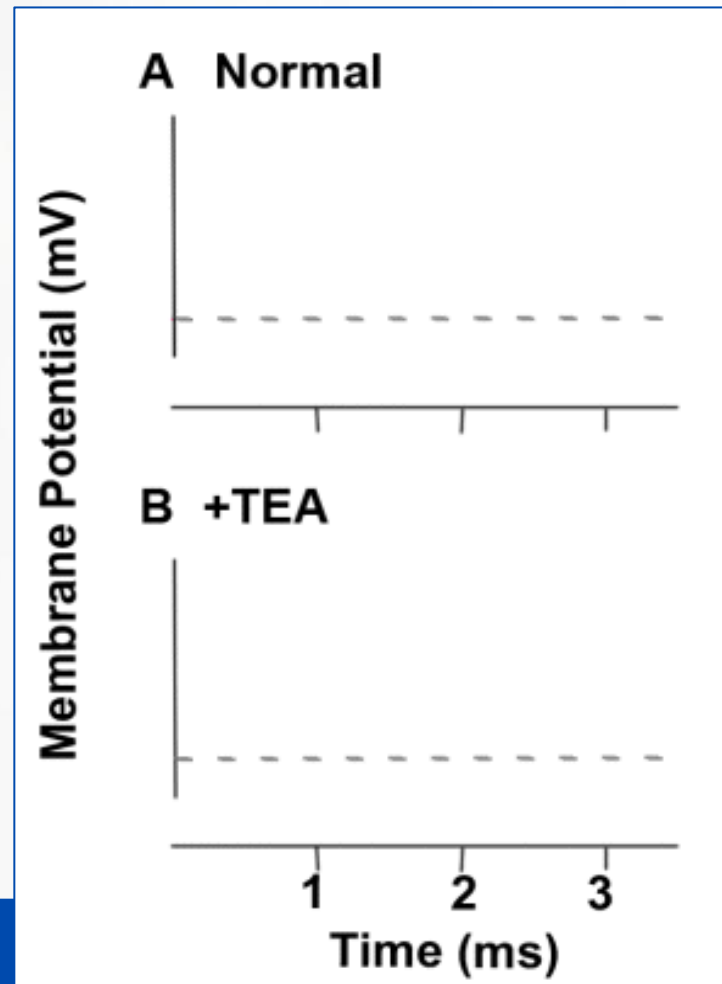
## Intracellular Recording



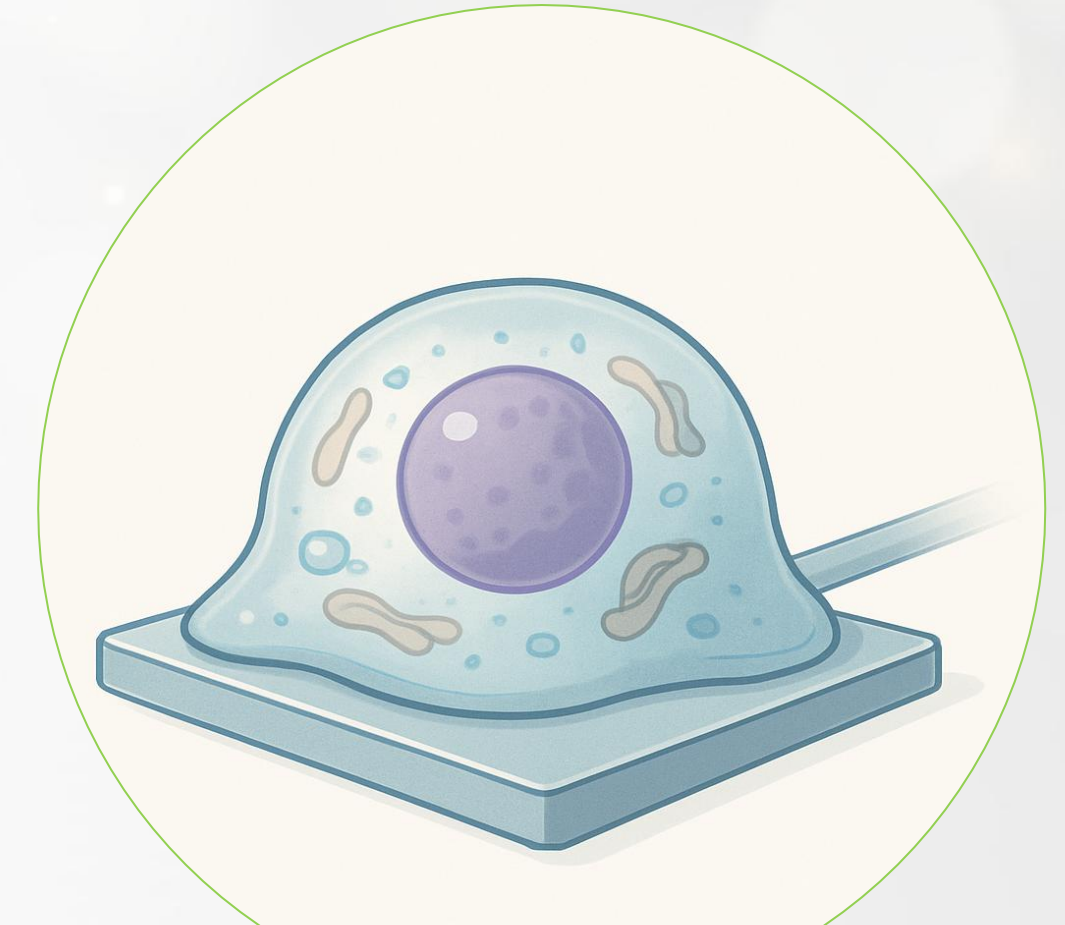
### Patch clamp



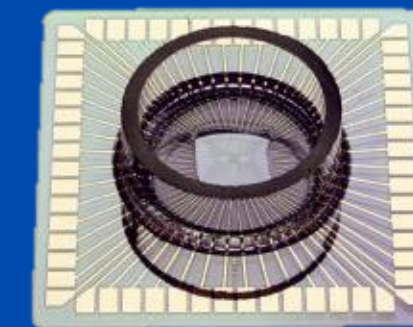
Measures membrane potential inside the cell  
Full action potential + subthreshold signals  
High amplitude (60–100 mV)  
Single-cell precision



## Extracellular Recording



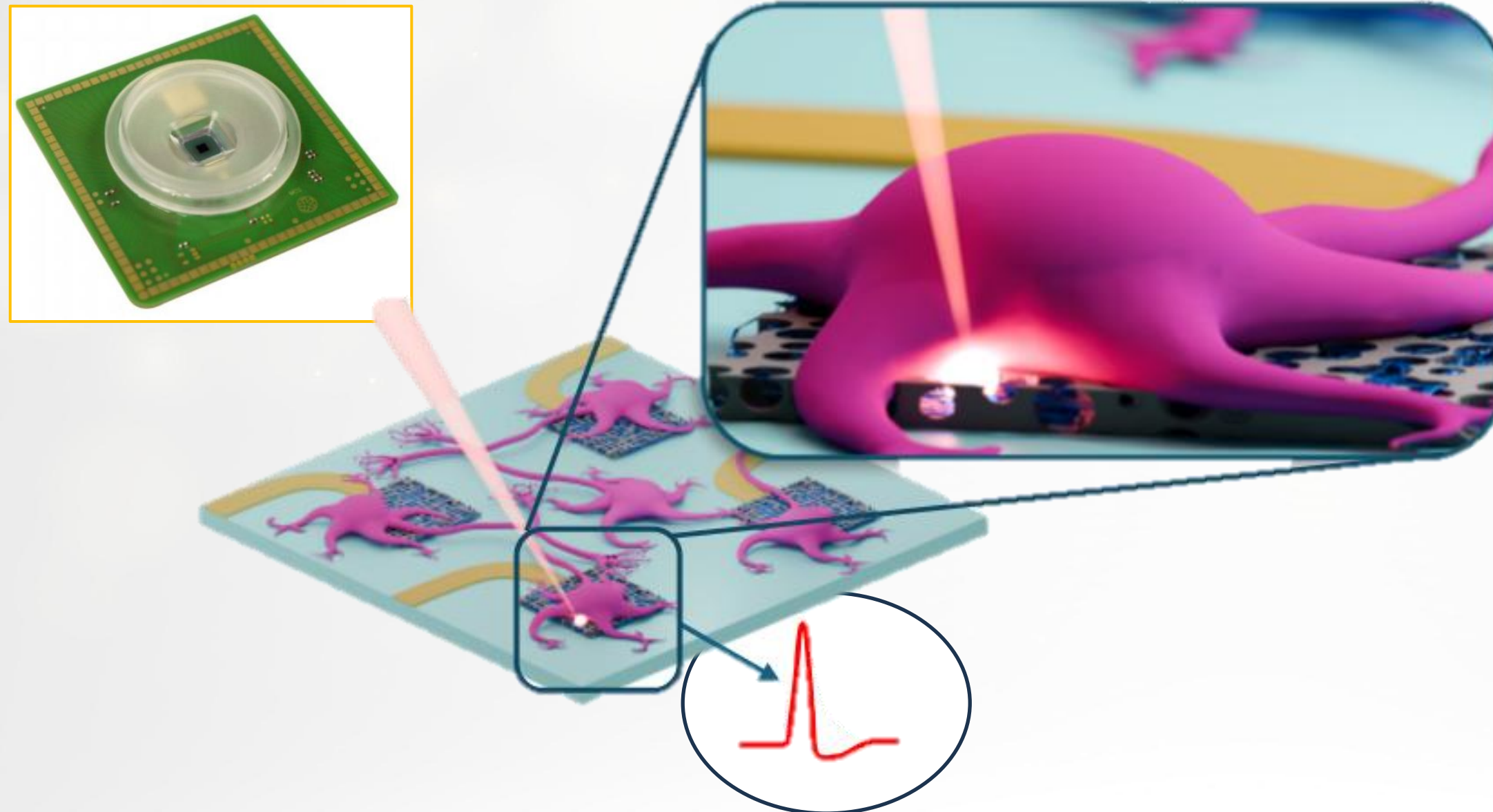
### Multielectrode array



Measures voltage outside the cell  
Spikes only (no subthreshold)  
Low amplitude (10–500  $\mu$ V)  
Multi-site, scalable recordings

# THE TECHNOLOGY

## - Optoporation -

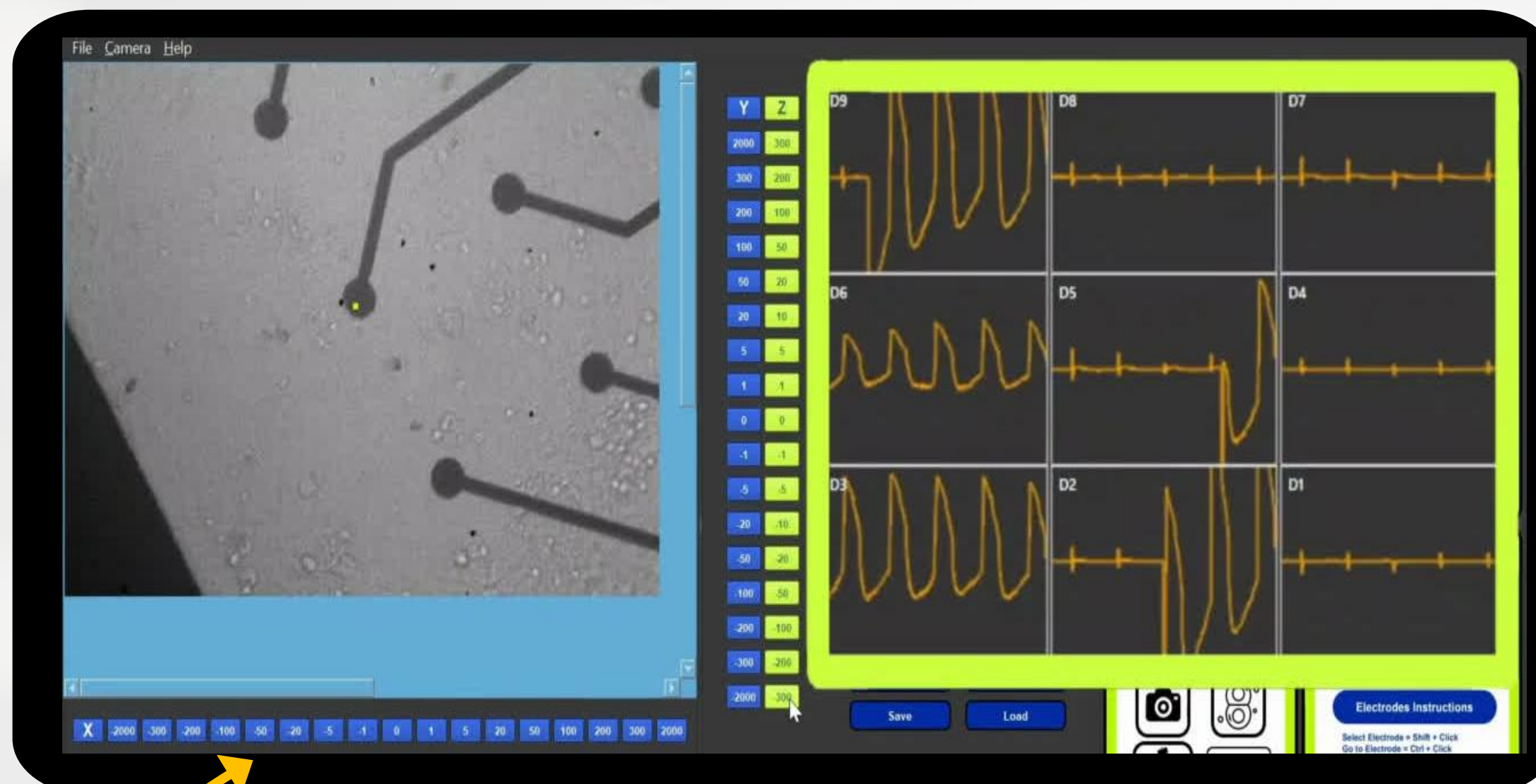


patch-clamp-like accuracy

high-throughput measurements

- An ultrafast laser creates temporary nanopores in the cell membrane
- The pore reseals spontaneously, preserving cell viability
- Enables electrical access to the cell interior
- Enables high-throughput measurements with patch-clamp-like accuracy
- Allows intracellular recordings in tissues, not only isolated cells
- Easily combined with other techniques (optical imaging, stimulation, pharmacology)





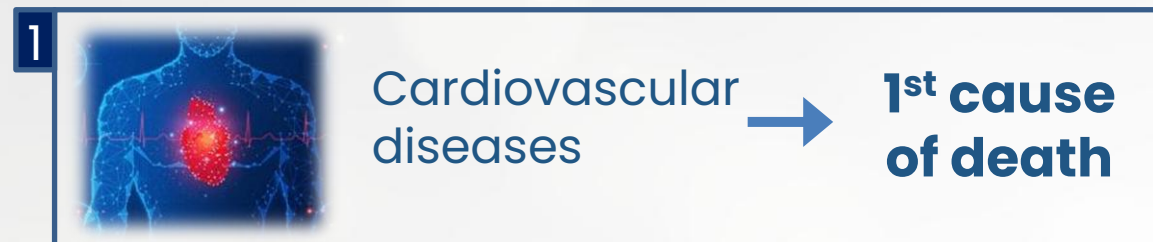
We developed the first line of laser-based products for pharmacology and low-invasiveness in vitro studies. Thanks to our patented technology, we can record action potentials in human cardiac cells, enabling long-term cardiotoxicity assessment.

**SOFTWARE : FBAIps**

**INSTRUMENT: IntraCell**



Commercial MEA device



Excitation-Contraction Coupling (ECC) **poorly investigated due to the lack of technologies.**



**Preclinical in vitro therapeutic testing**

Advanced human models

→ **NO suitable technologies**



Increasing trend of drug toxic effects

**Cardiotoxicity**



**Slow drug development**

**High costs**

# THE PROBLEMs WE SOLVE

1

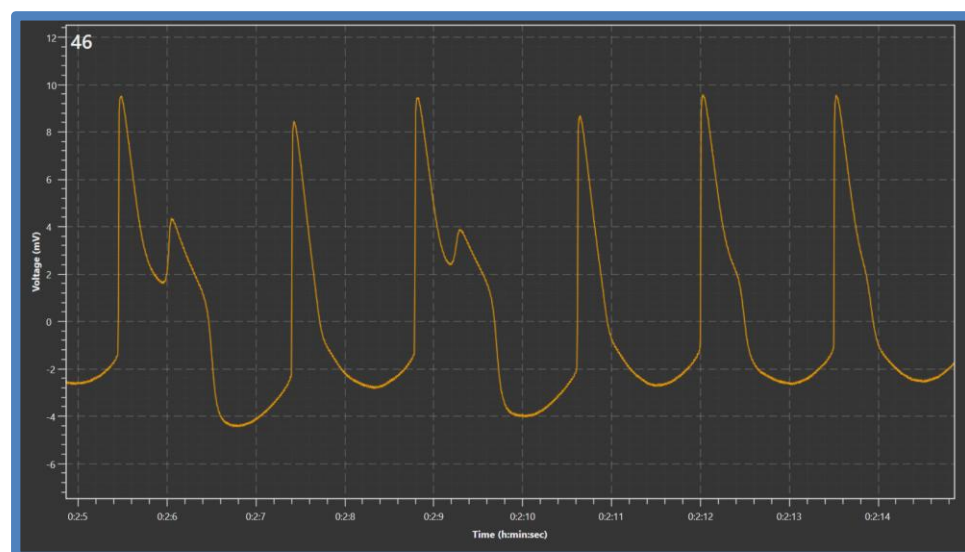
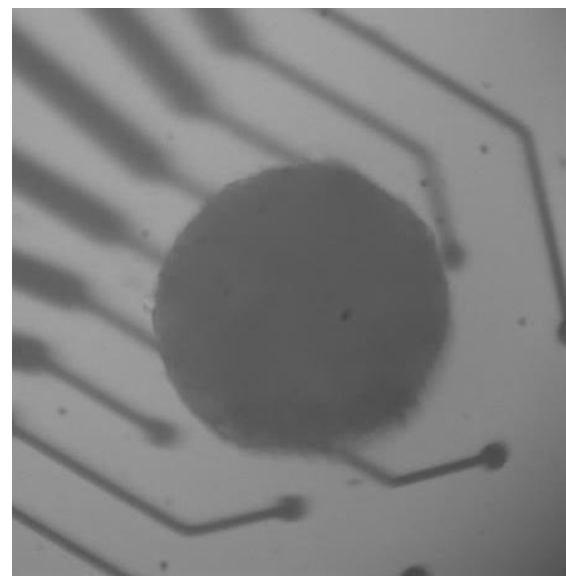
Cardiovascular diseases (CVDs) are the **first** cause of death worldwide. Despite new technologies being developed in the past years there are still unresolved issues, such as the comprehensive study of the excitation contraction coupling.

2

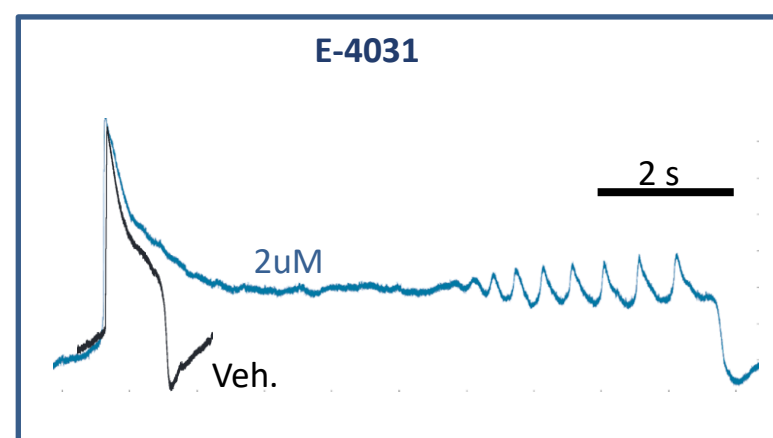
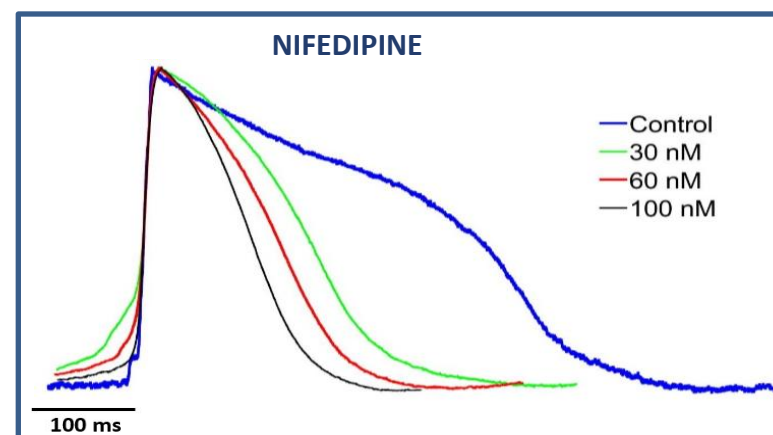
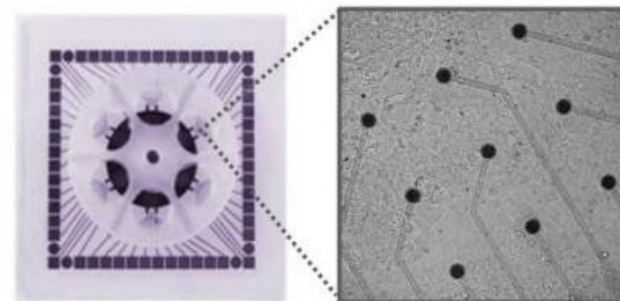
Biologists have developed advanced human in vitro models that can recapitulate faithfully the human body (3D organoids), but current technologies are not designed to study those advanced human models.

3

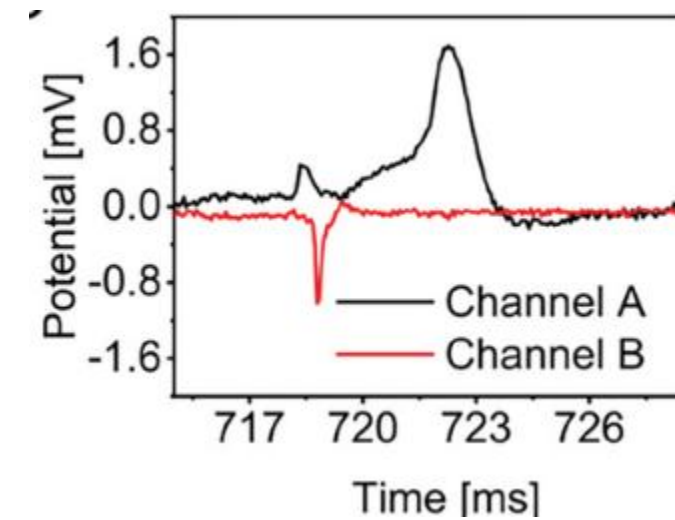
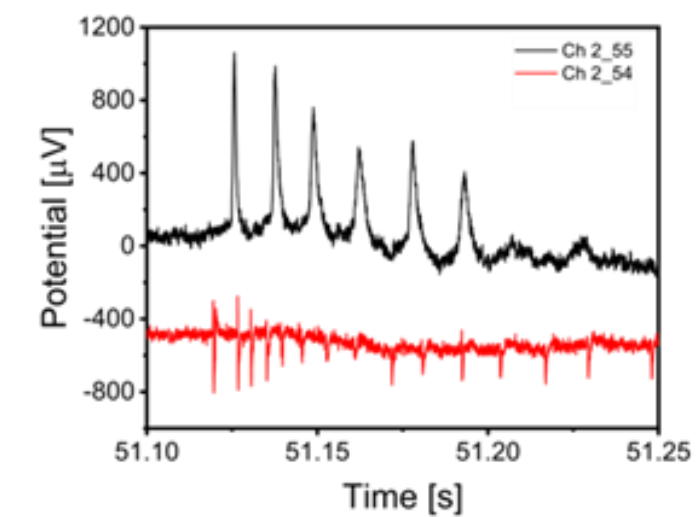
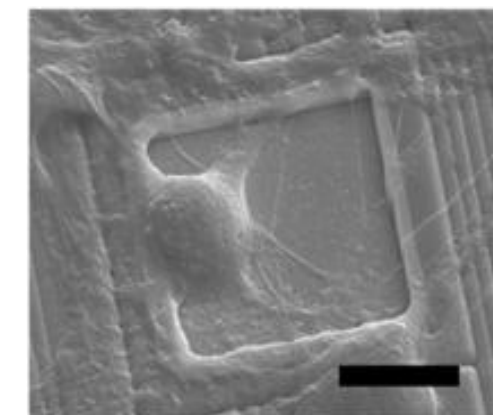
Cardiotoxicity plays a critical role as it is one of the main causes for rejection of new molecular entities.



## CARDIAC ORGANOIDS



## CARDIAC CELLS



## NEURONAL CELLS



# MEET OUR TEAM MEMBERS

## ELECTRONICS ENGINEER

Stefanos Ioakeimidis

PhD in electrical engineering



## CEO

Michele Dipalo

PhD in electrical engineering



## SOFTWARE ENGINEER

Carolina Scandellari

MD Biomedical engineering



## CTO

Giulia Bruno

PhD Biomedical engineering and Robotics



## SOFTWARE ENGINEER

Alice Godino

MD Biomedical engineering



## MECHANICAL ENGINEER

Leonardo Toccafondi

MD Mechanical engineering



Our **board of directors** includes recognized scientists and successful entrepreneurs with a strong track record in business development



**Director**  
Karl-Heinz Boven



**Director**  
Andreas Moeller

25 anni di esperienza nello stesso mercato di Foresee Biosystems.  
Co-founder di **Multi Channel System MCS GmbH**  
Ex-direttori di MCS Holding GmbH





**THANK YOU**

**VISIT US**



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