BiofunCardio

PI: Aleksandra Benko

Biofunctional scaffolds aided with electrical stimulation for differentiation of stem cells into cardiomyocytes

LIDER/7/0020/L-11/19/NCBR2020

Project duration: 2021 – 2025

Budget: 1,500,000.00 PLN (approx. 350,000 EUR)

AGH UNIVERSITY OF KRAKOW

AGH

LIDER

NCBR

National Centre for Research and Development

The Team

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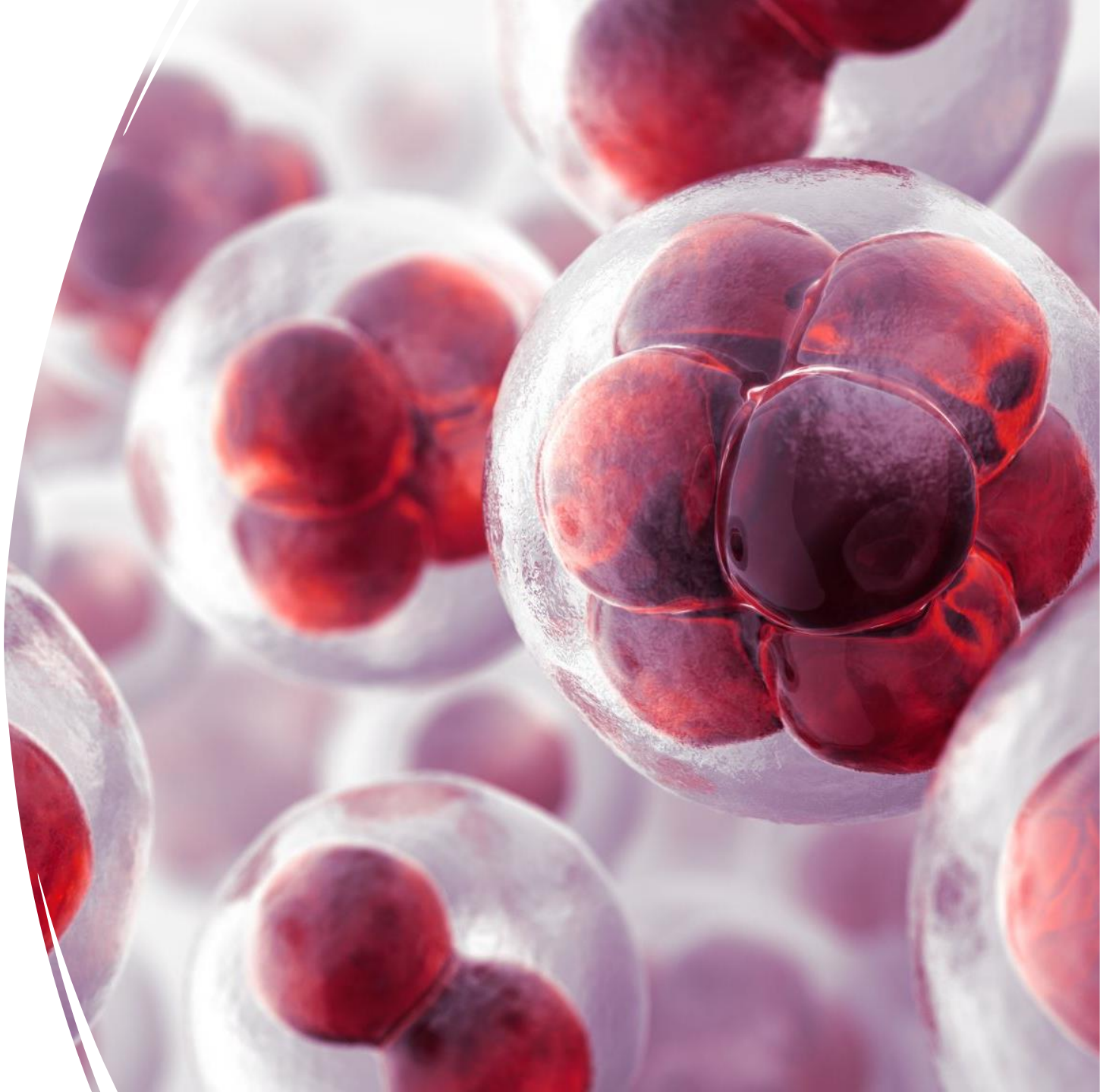
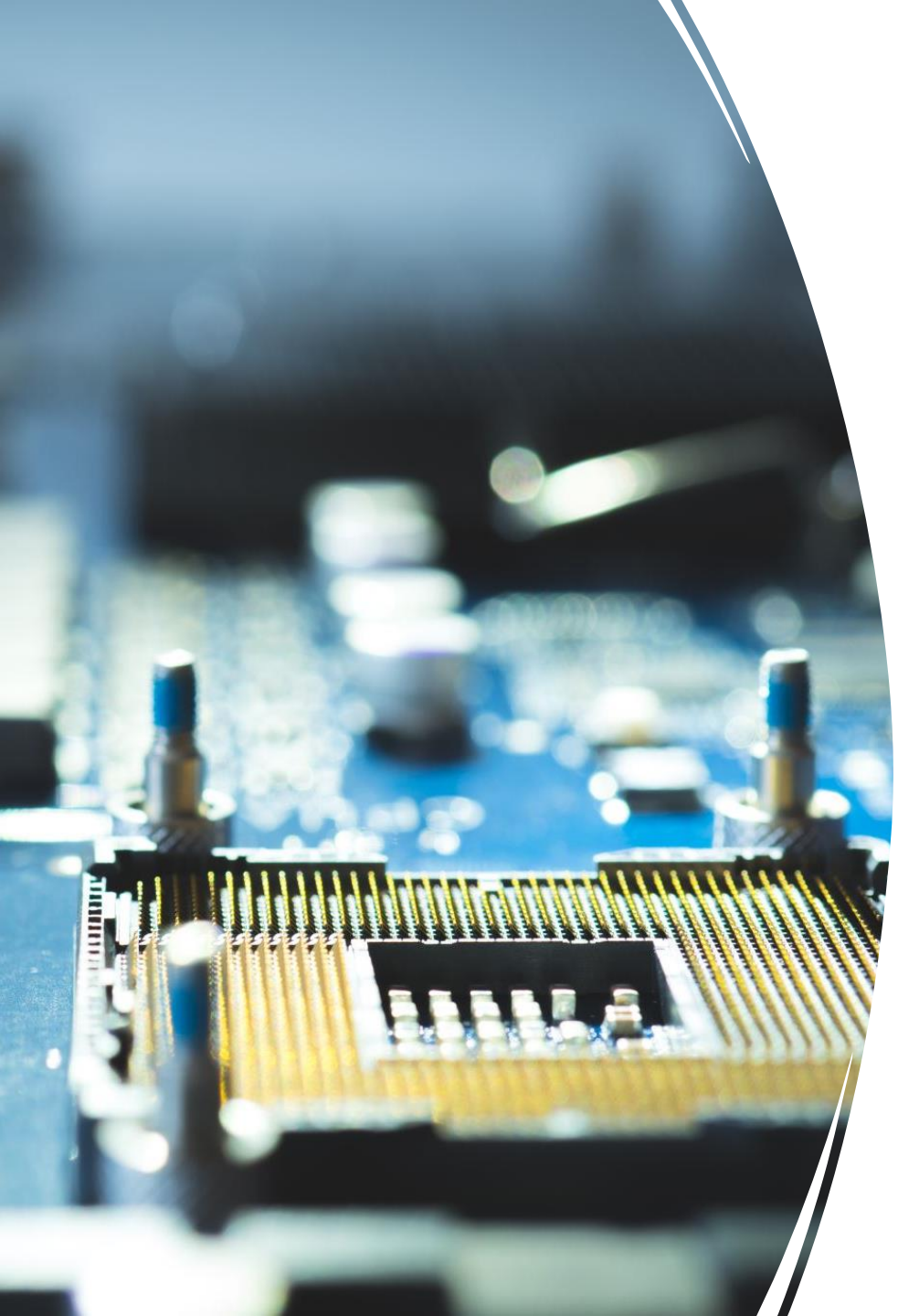
AIM

- The aim of the project is to design, optimize, and fabricate a set of tools that could speed up maturation of induced pluripotent stem cells – derived cardiomyocytes.

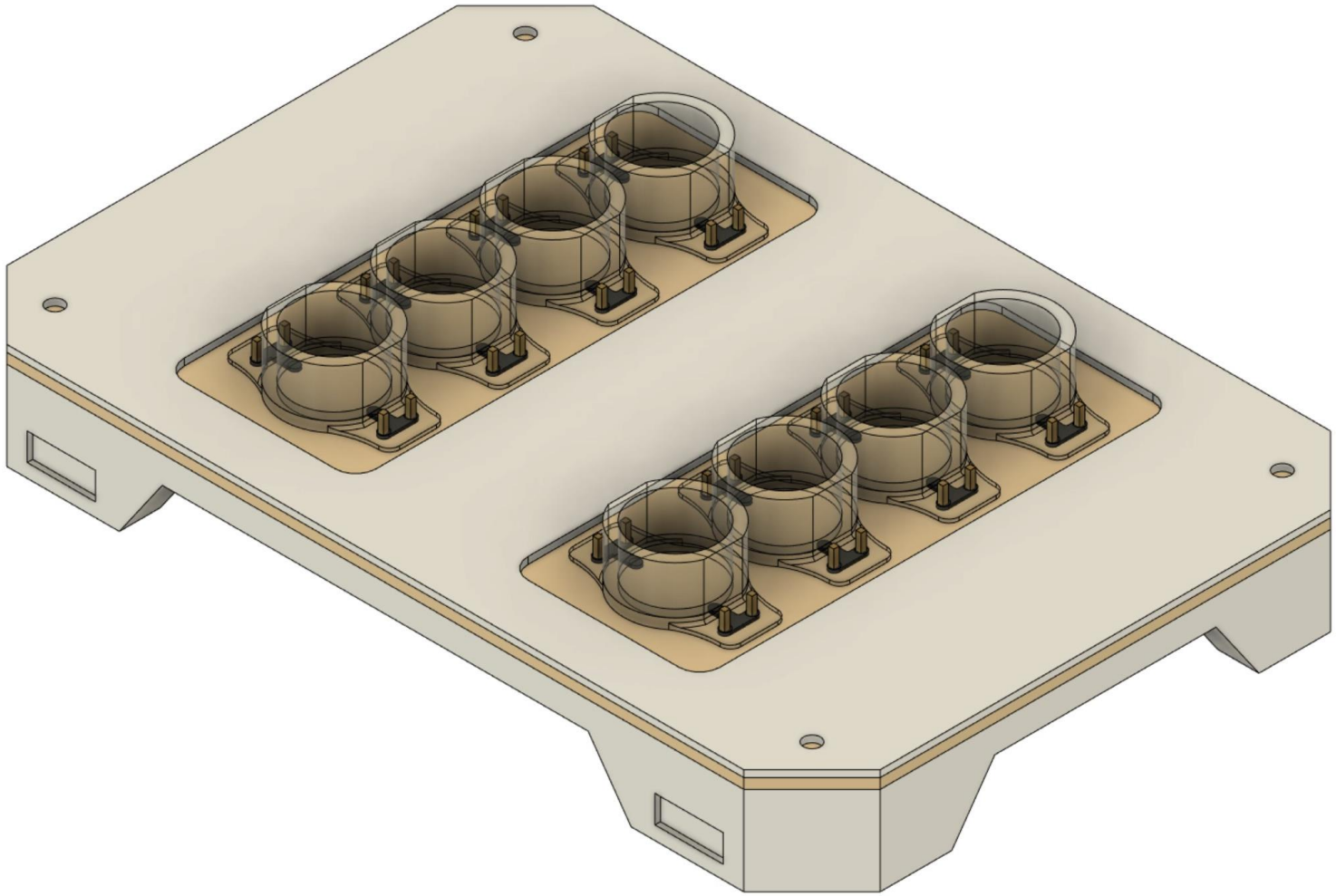




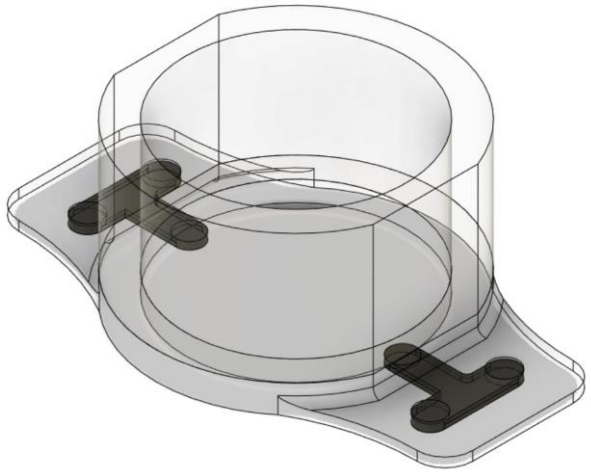
System components

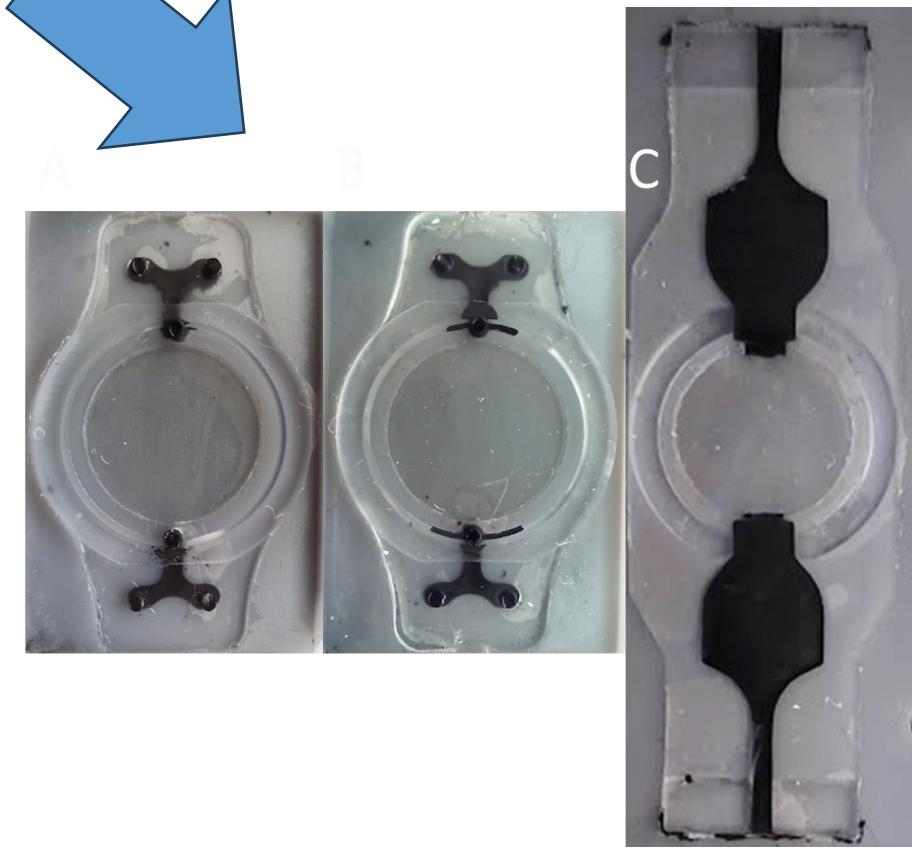
- The system consists of 4 elements **(priority claim no. EP23172756):**
  - Elastic and autoclavable cell wells with embedded electrodes + printed circuit board with its casing
  - Wireless signal generator, based on a microcomputer
  - Desktop application
  - 3D printable, biocompatible and biomimetic scaffold, based on native collagen type I **(priority claim no. P.446675)**

1. Developing a culture chamber – priority claim no. EP23172756



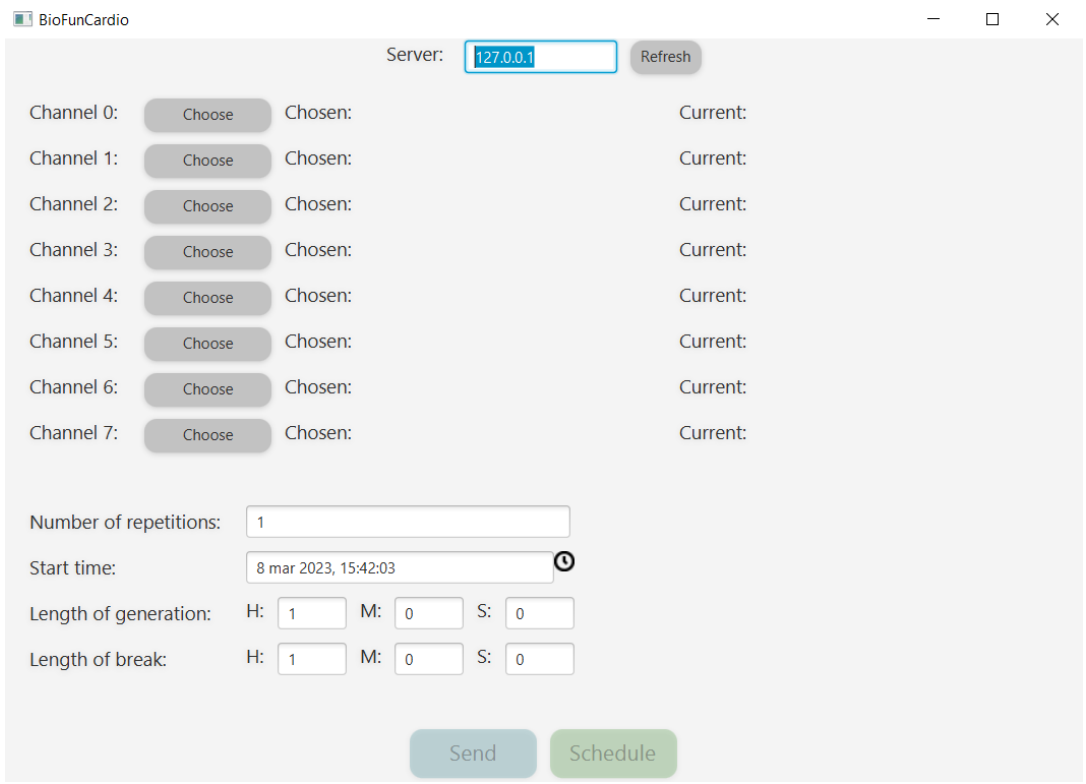
2. New type of cell culture wells – priority claim no. EP23172756

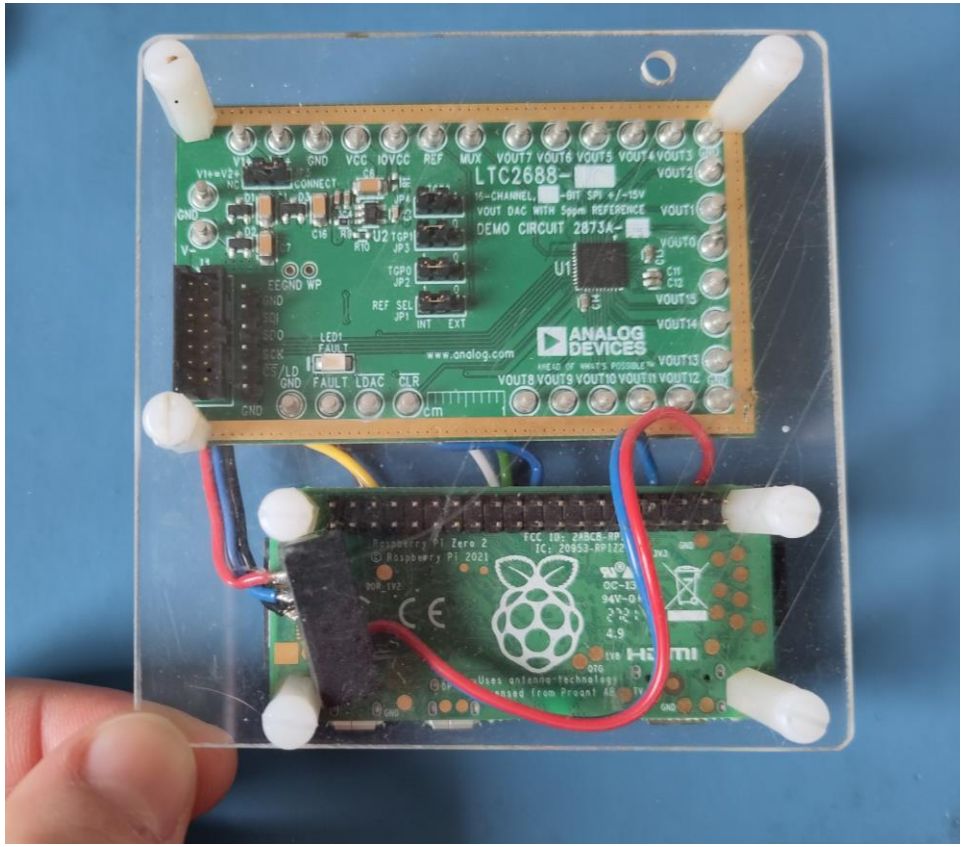




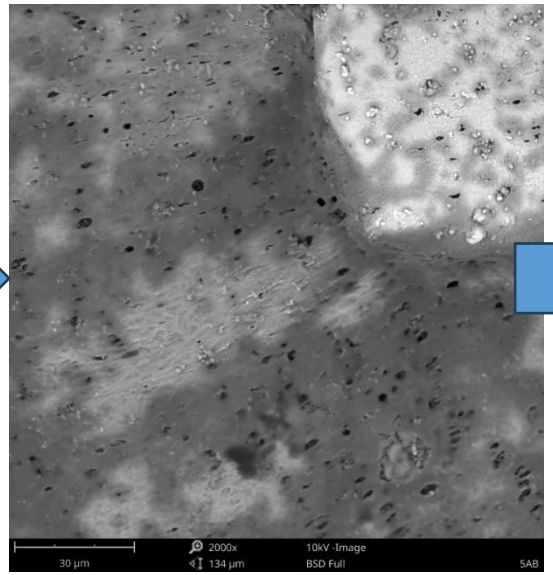
Side project – 3D printable, electrically conductive material

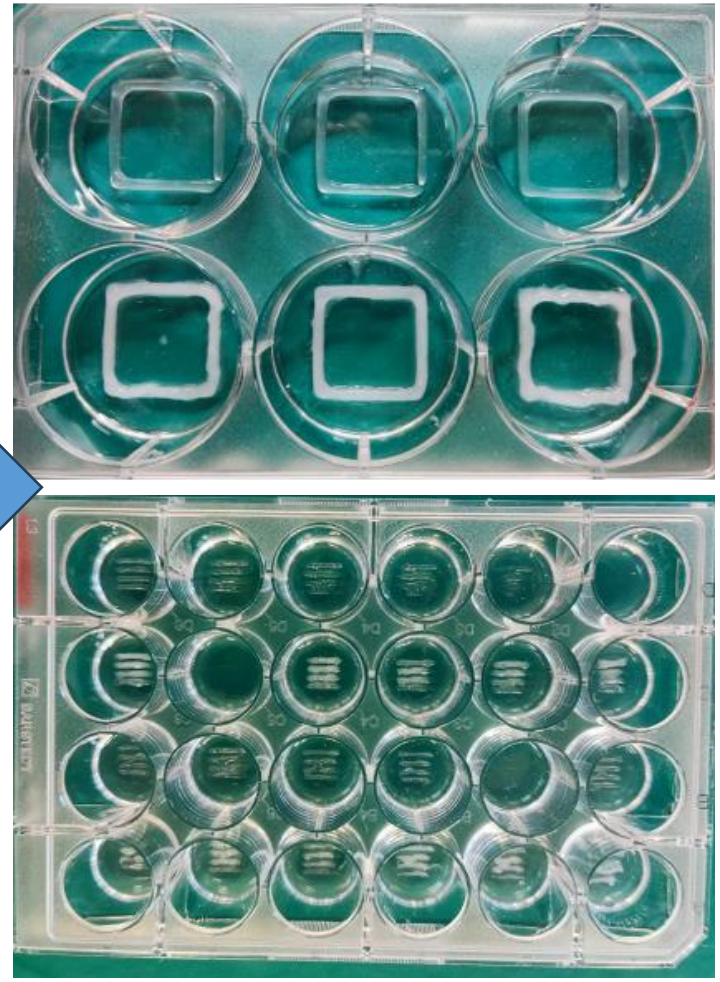
3. Autonomic & wireless steering unit – priority claim no. EP23172756



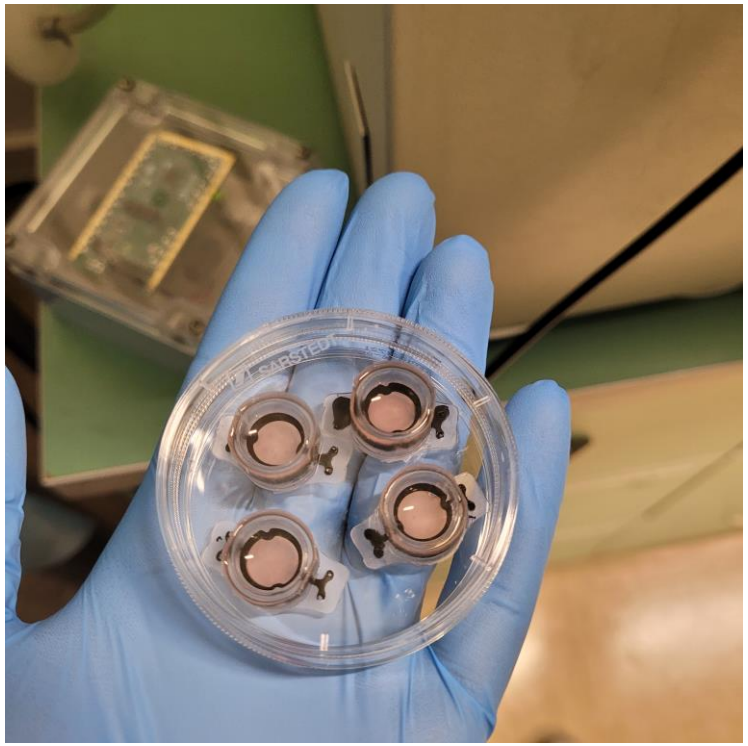


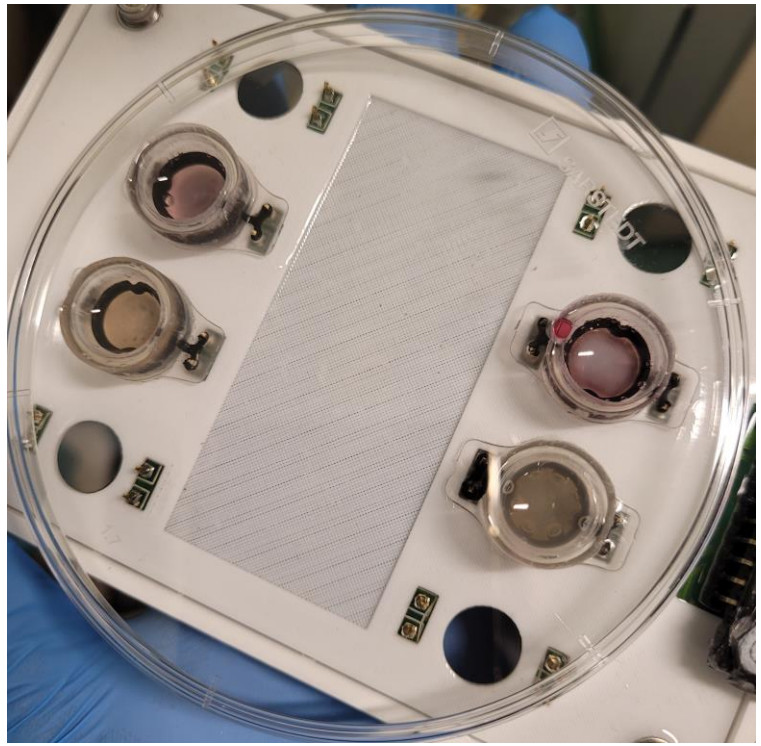
4. Developing a collagen–based, electrically conductive & drug eluting scaffolds **(priority claim no. P.446675)**





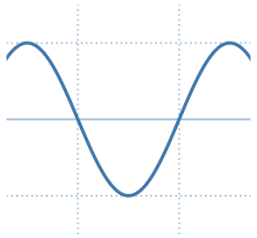
All elements combined





Advantages

Autoclavable



Signal can flow through the scaffold and/or through the medium

Wireless

Up to 8 independent, fully programmable signals

Keep in touch!

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