TECHNOSHOP

Plateforme technologique

COHOBIT

3D PRINTING FOR AN ENHANCED SURGICAL TRAINING MODEL

DESIGN AND MANUFACTURE OF A SOFT SILICONE EXTRUSION BASED 3D PRINTER FOR BIOMIMETIC KIDNEY MODELS

BEGINNING 04/2022

THE PROJECT

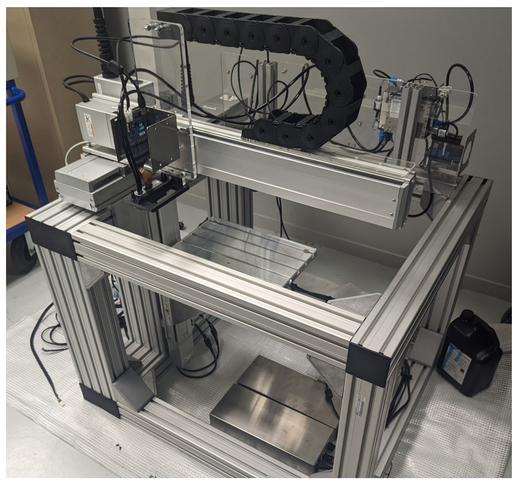
3D printing of kidney models

SUPPORT

ANR / RHU

OBJECTIVES

Design and manufacture of an industrial-grade 3D printer for the production of biomimetic kidney models.



PROPOSED SOLUTION

To develop an industrial-grade 3D printer for producing biomimetic kidney models (biomimetic in terms of mechanical properties and perfusability) from routine medical imaging data, the TechnoShop has designed and manufactured an extrusion-based 3D printer. The printed materials are soft silicones with liquid inclusions, which allow the creation of flexible models capable of “bleeding” and exhibiting behavior close to that of a real kidney during surgical gestures. Because the materials remain liquid during printing, the process is carried out within a gel using a technique developed by the Syensqo laboratory.

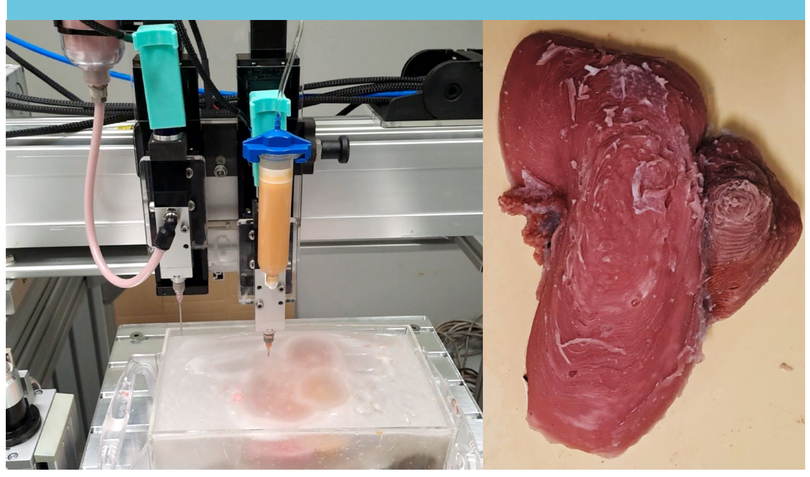
EXPERTISE AND ROLE OF TECHNOSHOP

TechnoShop teams have mobilized expertise in :

- Project management
- Mechanical design and manufacturing
- Electrical design and manufacturing
- IT programming

RESULTS

- Extrusion based 3D printer prototype and kidney biomimetic models



PARTNERS

Bordeaux CHU, CRPP and Syensqo laboratories