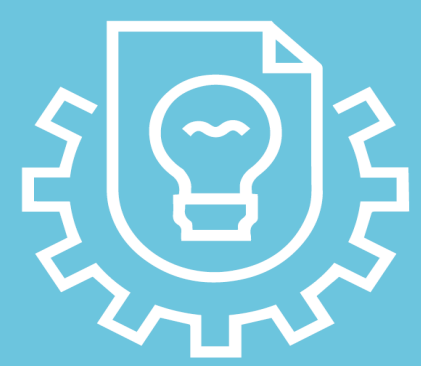


3D PRINTING FOR AN ENHANCED SURGICAL TRAINING MODEL

DESIGN AND MANUFACTURE OF AN INKJET-BASED 3D PRINTER
FOR BIOMIMETIC KIDNEY MODELS



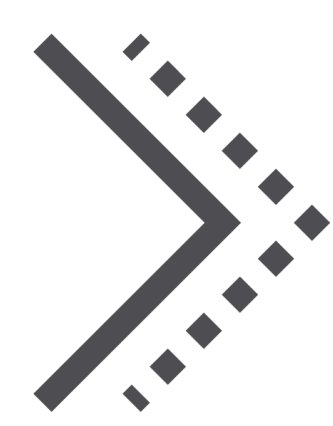
BEGINNING 04/2022

THE PROJECT

3D printing of kidney models

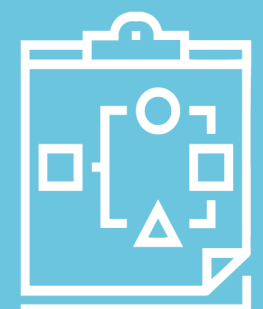
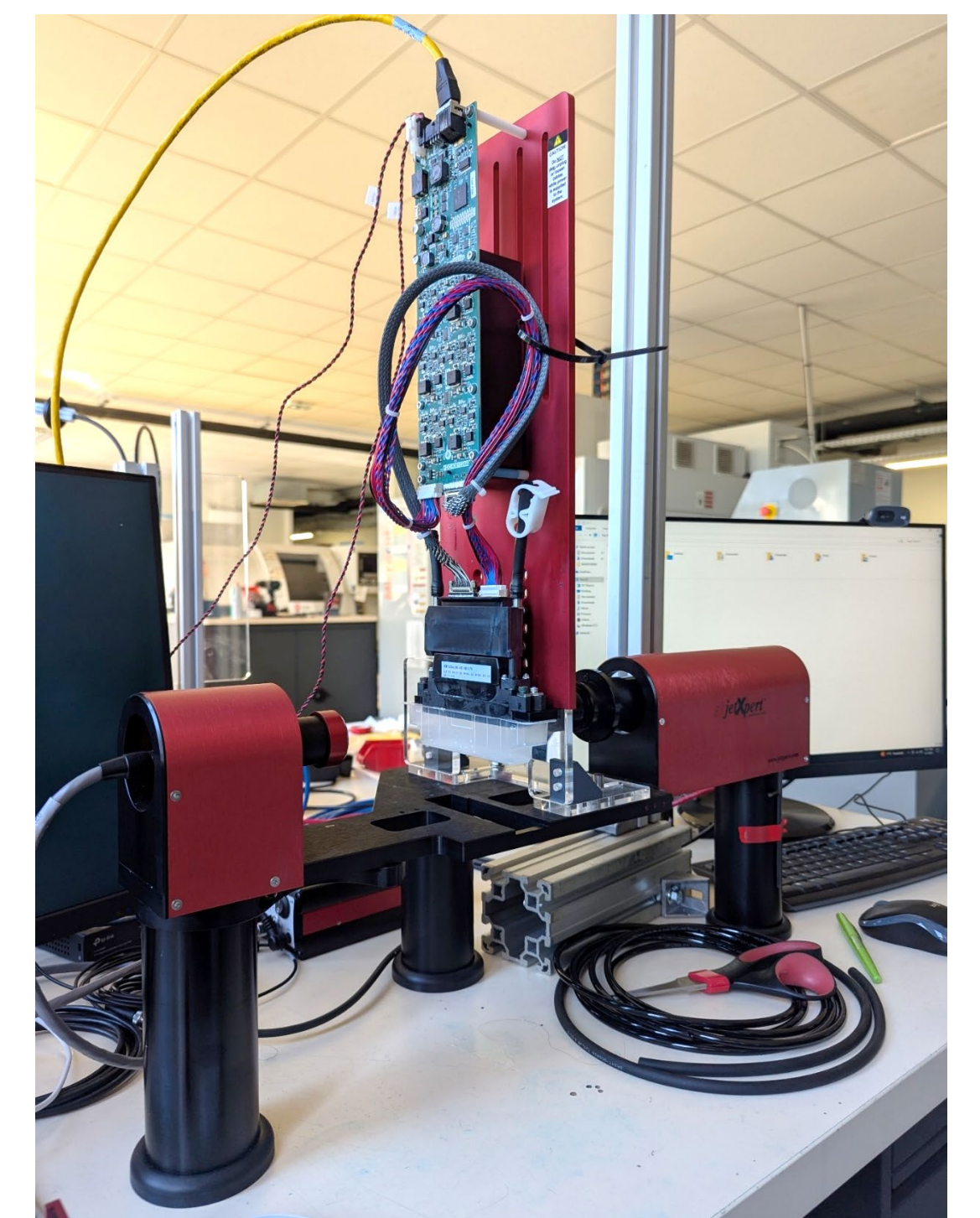
SUPPORT

ANR / RHU



OBJECTIVES

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



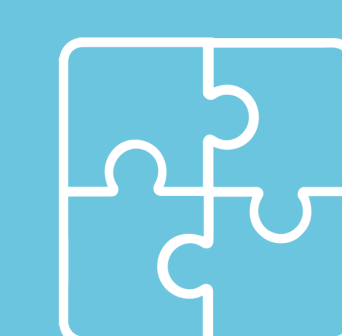
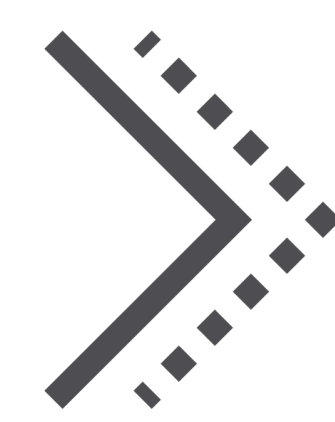
PROPOSED SOLUTION

For the training of future surgeons and for pre-operative rehearsal of surgical procedures, TechnoShop has developed an inkjet 3D printer capable of producing personalized kidney models from patient scan images. This machine is equipped with a monitoring system that visualizes the trajectory of droplets ejected by the print heads, in order to optimize their deposition. This technology makes it possible to create biomimetic models whose mechanical behavior closely resembles that of a real kidney, by using photopolymerizable materials synthesized by the Rescoll laboratory and by generating gradients of ink properties within the model.

EXPERTISE AND ROLE OF TECHNOSHOP

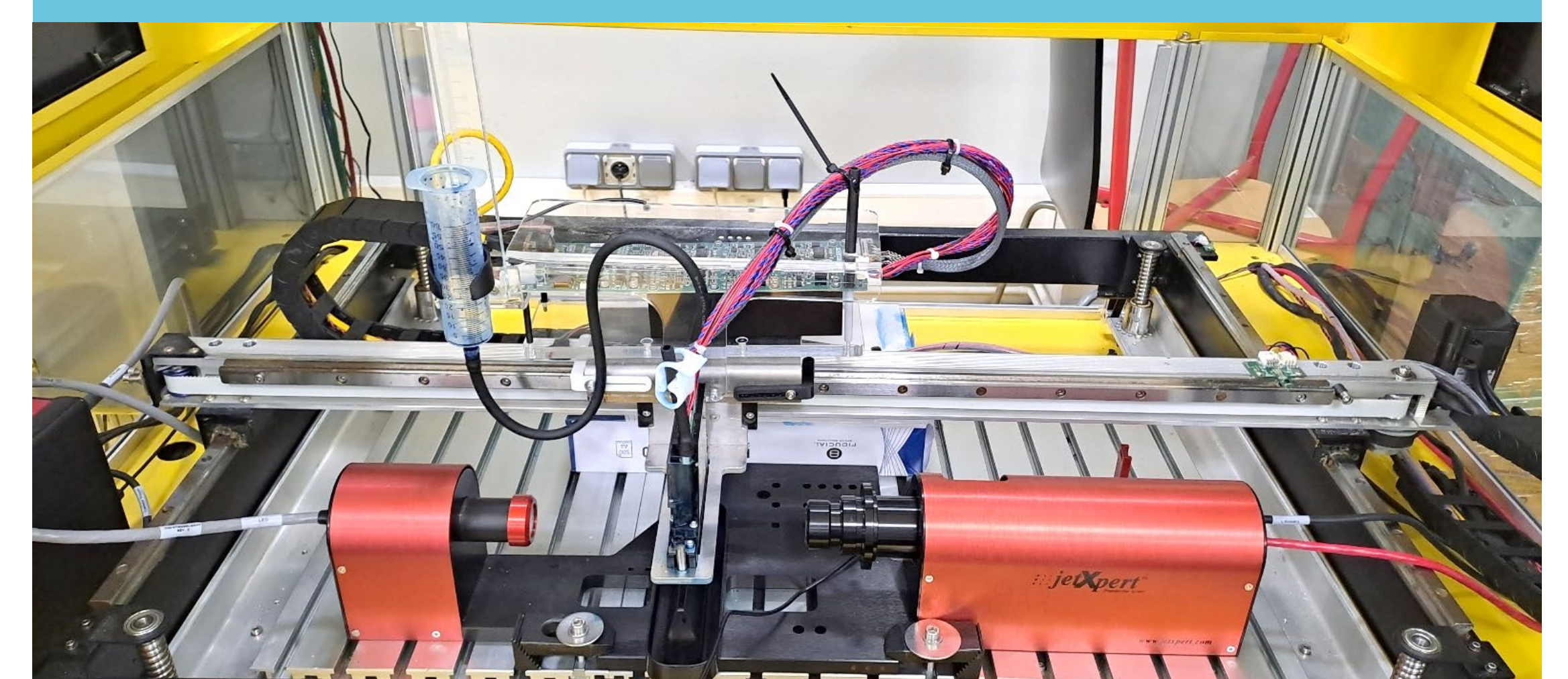
TechnoShop teams have mobilized expertise in :

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



RESULTS

- Inkjet-based 3D printer prototype, kidney biomimetic models, and monitoring system



PARTNERS

Bordeaux CHU, Rescoll laboratory