

Design and manufacturing of a fibrous actuator

Start: winter 2025–2026

Supervisors: J. Chaves-Jacob and L. Tadrist (julien.chaves-jacob@univ-amu.fr, loic.tadrist@univ-amu.fr)

Host Laboratory: Institut des Sciences du Mouvement UMR7287, SBI Team

Location: Aix-en-Provence (IUT Aix campus)

Duration: 18 months (1.5 year)

Salary: Engineer (depending on experience)

Recommended Level: Engineering

Skills: Mechanical engineering, Electronical engineering, Design for manufacturing, Python.

Summary

The goal is to design a resilient actuator made of fibers. This actuator is designed for aerospace industry and is aimed at replacing redundant actuators with the same level of security. The project is funded by CNRS INNOVATION and will output on a patent.

The engineering task encompasses mechanical design, electronic communication design and manufacturing. After making the prototype, programming and testing of the prototype will be done.

At the end of the project, the co-development of the actuator is considered on a helicopter drone.

Work Environment:

The Institut des Sciences du Mouvement (ISM) is a multidisciplinary research unit. The laboratory's research focuses on the study of locomotion in living organisms from various perspectives. The Bio-Inspired Systems (SBI) team at ISM aims to study principles and strategies derived from biological systems to inspire and design innovative technological systems.