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More efficient work schedule and production

Wide range of expertise allows to better project design, shortening production and testing times, as well as reducing the number and/or severity of failures.

Risk: Individual responsibility increase and individual failures could block the system!! However, low risk low profit!!

Main “tasks” of 2025

DL+MW

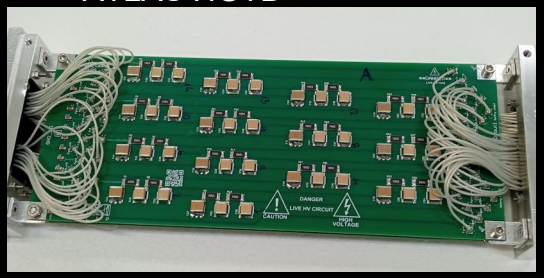
- DL
  - BrainPET
  - Sealed RPC
  - Neutron RPC
  - PPCs
  - ATLAS HGTD
  - Spark Chambers
  - Cloud Chambers
  - Exoplanetarium
  - All other internal requests
  - Significant number of external requests
- MW
  - BrainPET
  - Sealed RPC
  - Neutron RPC
  - PPCs
  - ATLAS HGTD
  - ProtoDune
  - Cloud Chambers
  - Exoplanetarium
  - All other internal requests
  - Significant number of external requests

2025 Highlights

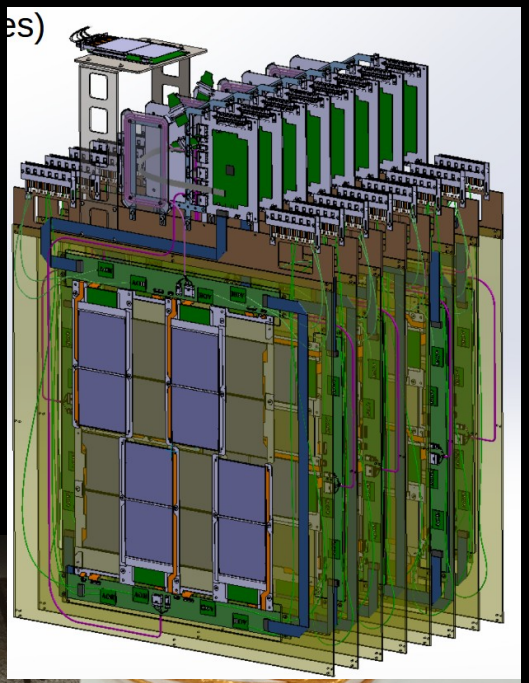
Luis Lopes

LIP-Groups

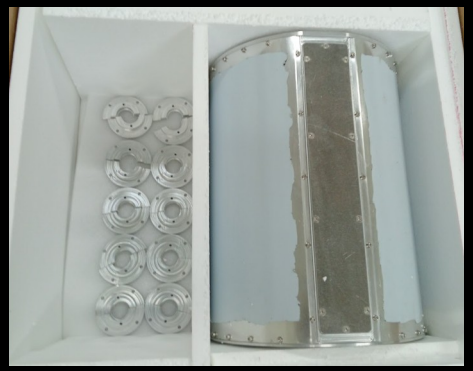
ATLAS HGTD



SND

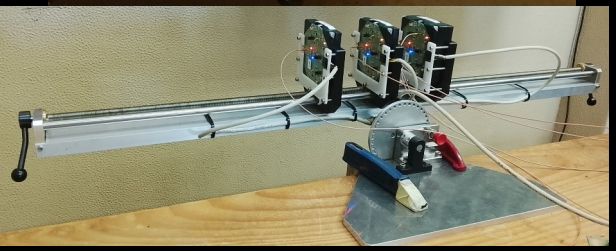


ProtoDUNE

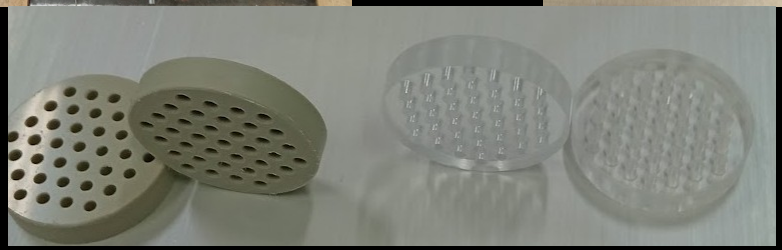


LIP-Groups

Muon telescope for classes and outreach

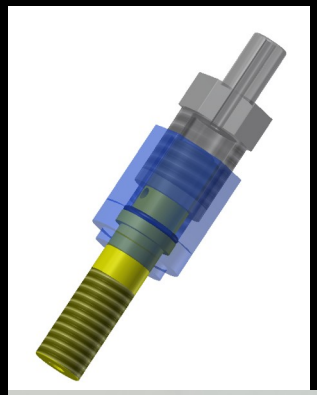


RD51-DRD1

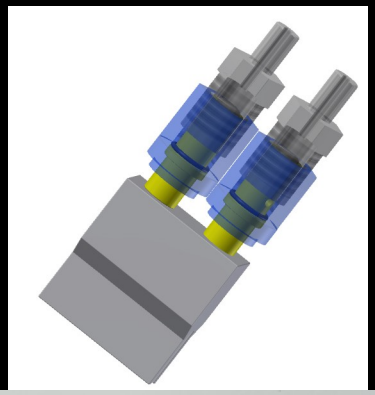


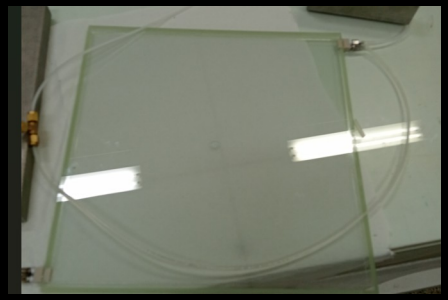
LIP-Groups - RPCs

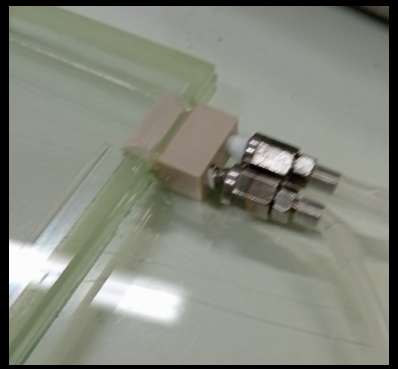
Sealed RPC



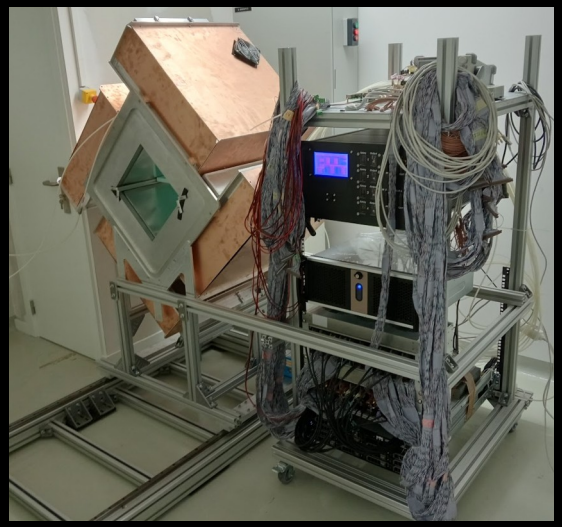
Sealed RPC





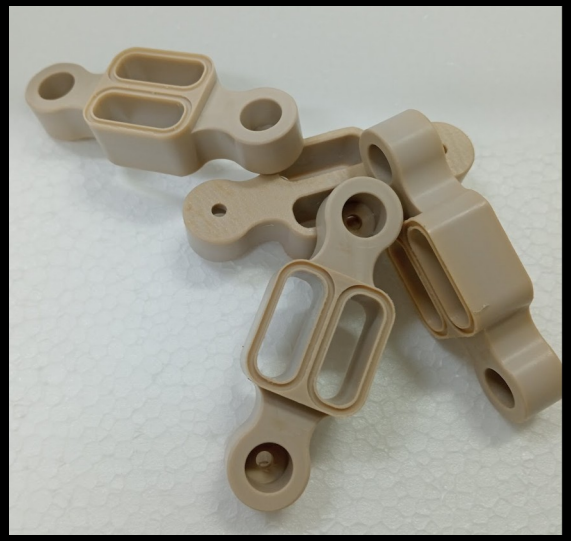


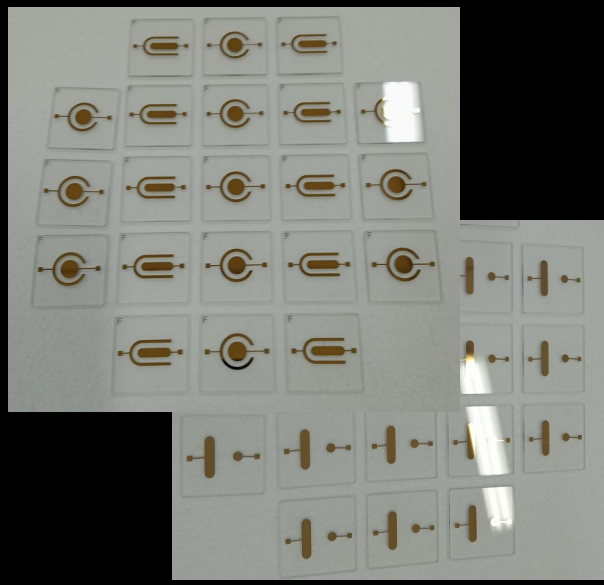
HiResBrainPET

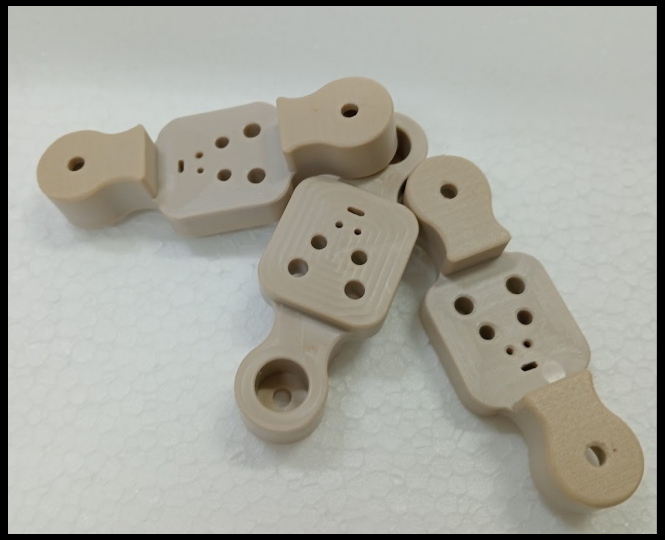


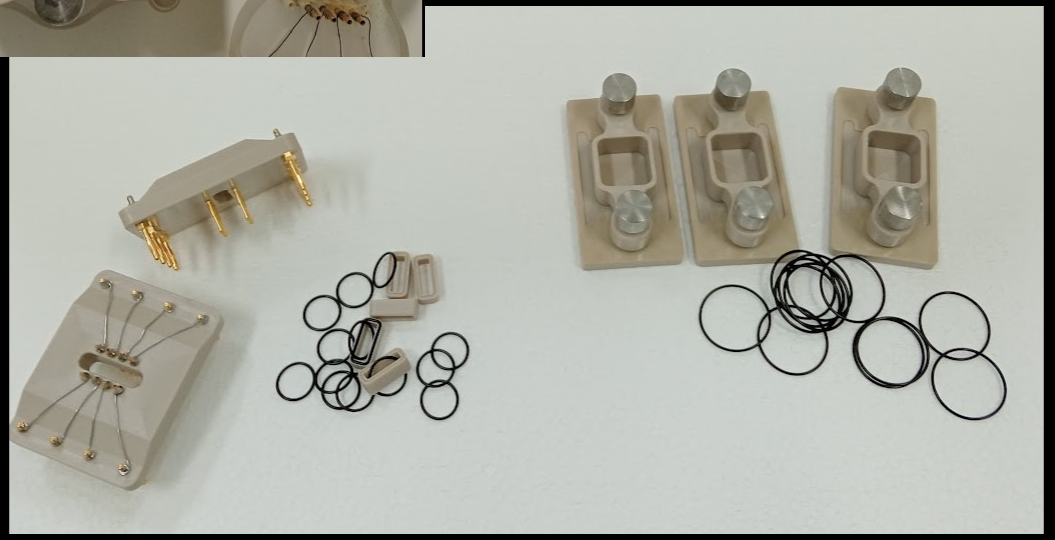
External Work – Bioelectronics & Bioenergy Research Lab - UC

Thermal metal evaporation, exploring a very old machine. More than 20k€ profit since 2022. Also large amount of measuring systems for life sciences.









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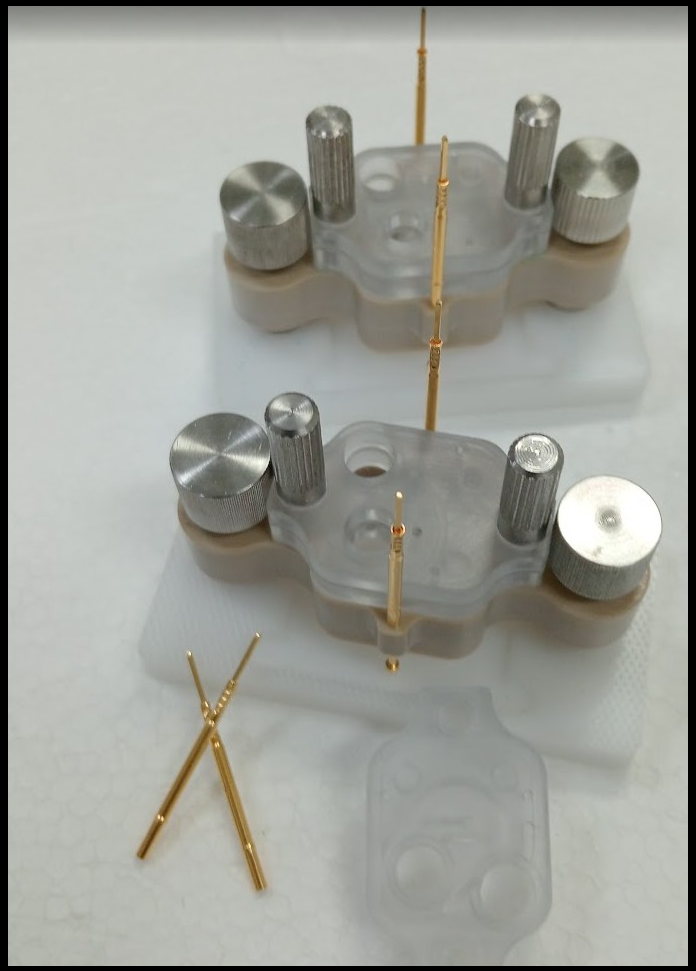
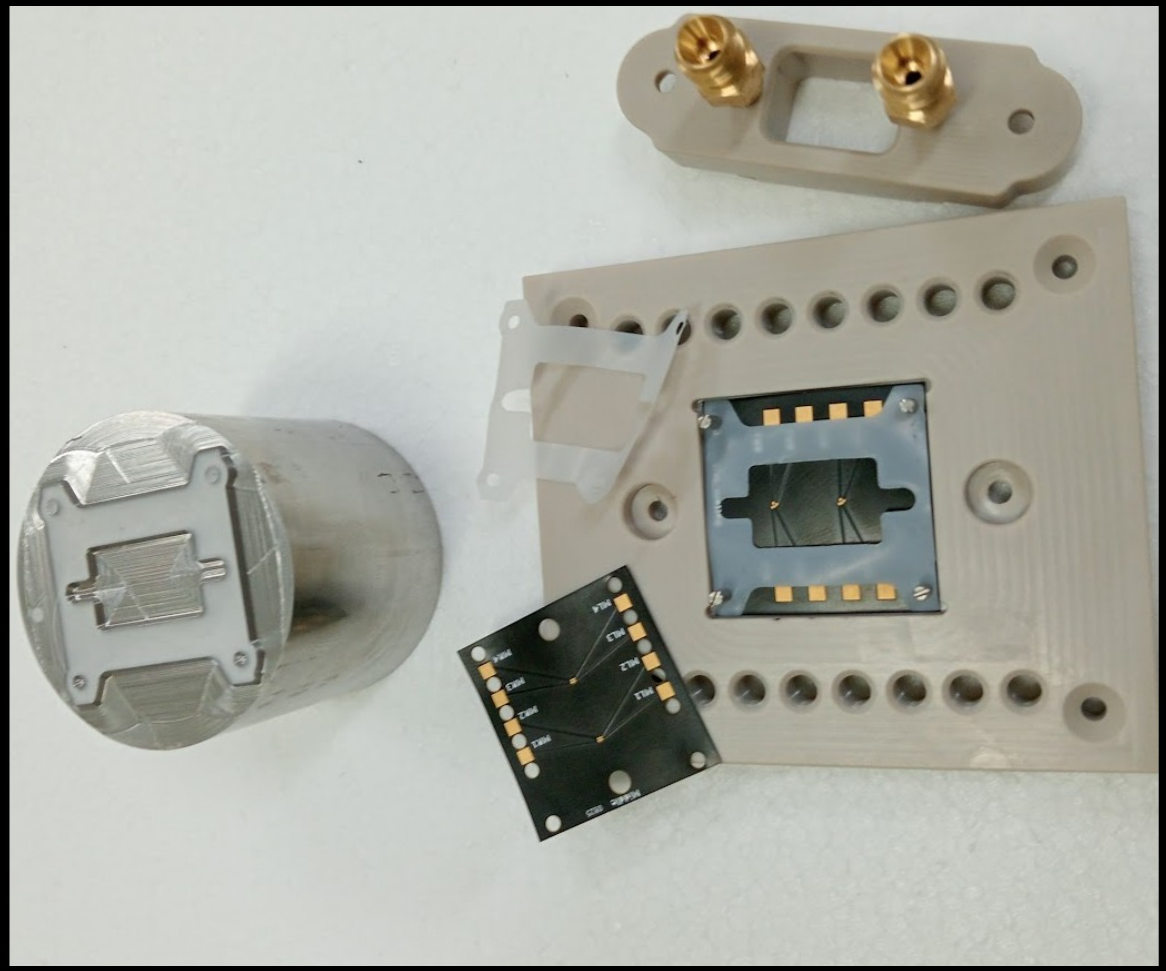


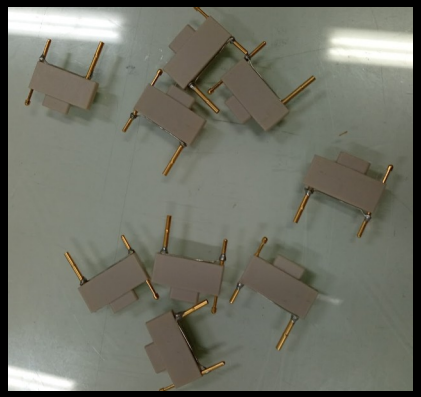


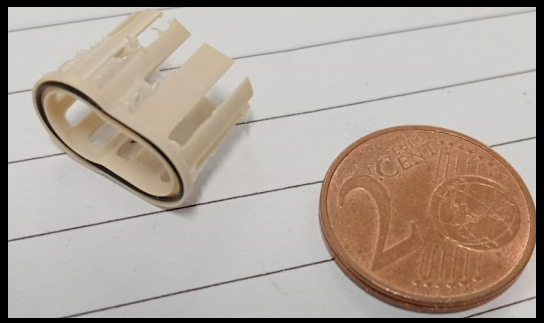
2025 Highlights

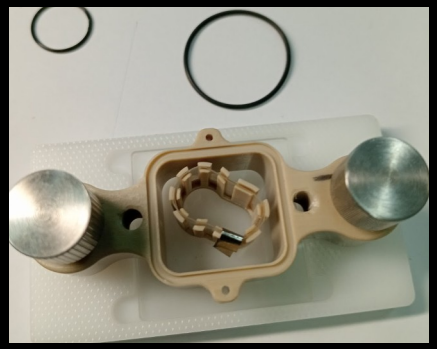
Luis Lopes

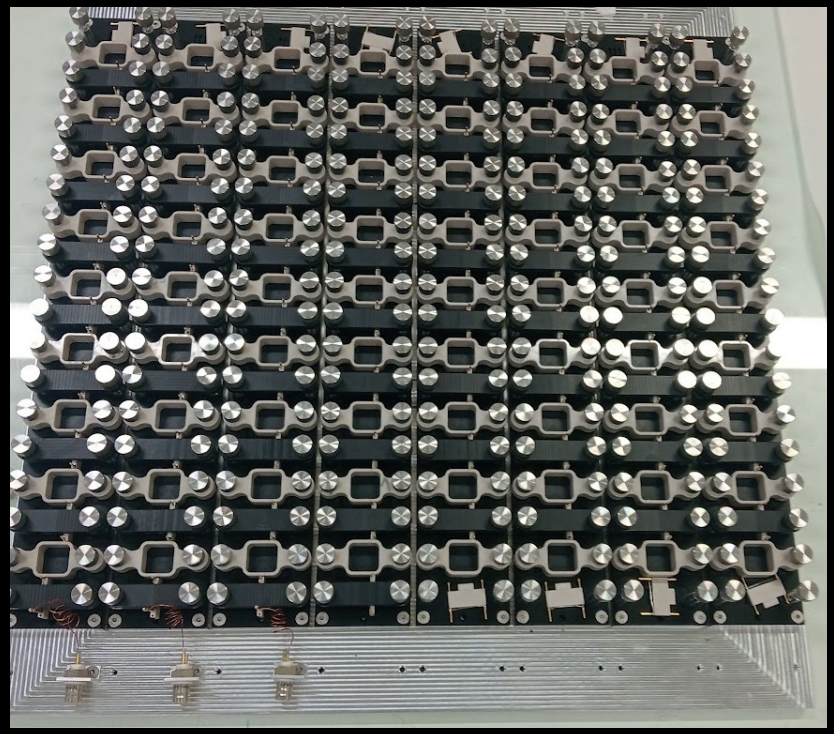
External Work – Bioelectronics & Bioenergy Research Lab - UC

- Upgrade e maintenance of considerable number of instruments and tools
- R&D, design and production of new instruments
- Close collaboration with very important opportunities



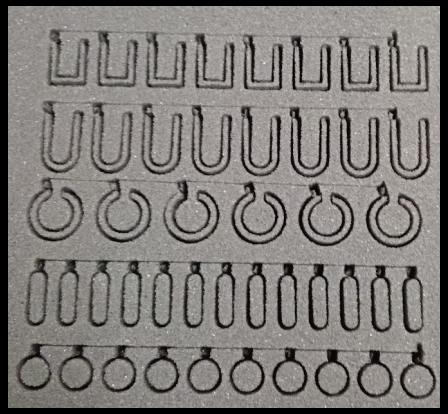


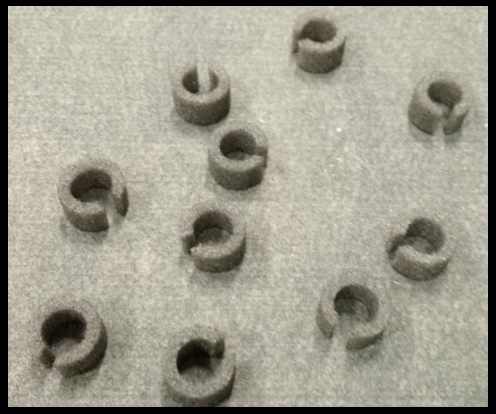


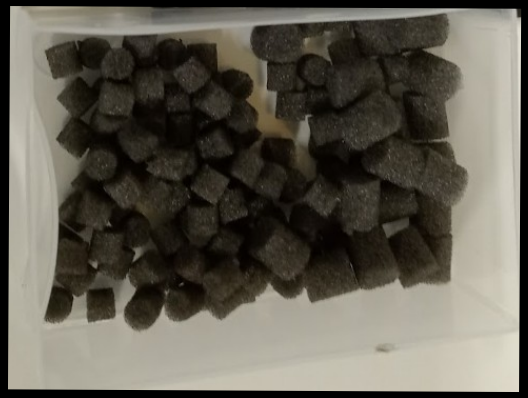


External Work – Bioelectronics & Bioenergy Research Lab - UC

Laser foam cutting

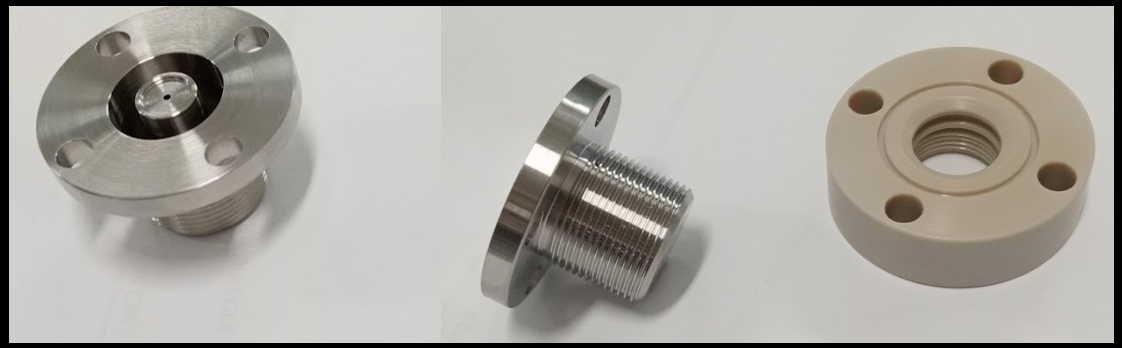






External Work – Physics Department, Coimbra University

- R&D, design and production of new tools/instruments



External Work –

- Unmanned aerial biosensors for ultra sensitive detection of biological agents
- Direct financing
- Additional income from work required from other project partners

External Work –

- Vitalbox – It aims to contribute to improvements in organ transportation, thereby reducing the organ loss rate.

SPS G6305 COLLABORATION AGREEMENT

This **AGREEMENT** made the date of last signature below **BETWEEN**:

(1) **THE UNIVERSITY OF BATH**, an exempt charity established by Royal Charter under number RC000644, whose principal offices are at Claverton Down, Bath BA2 7AY, England ("**Lead**"); and

(2) **ETH ZÜRICH**, a research institution and university subject to Swiss public law, whose principal offices are at Rämistrasse 101, CH-8092 Zurich ("**ETH Zürich**"); and

(3) **THE UNIVERSITY OF COIMBRA**, Calçada Martim de Freitas, 3000-456 Coimbra ("**Coimbra**");

(4) **LABORATÓRIO DE INSTRUMENTAÇÃO E FÍSICA EXPERIMENTAL DE PARTÍCULAS**, a national independent laboratory under the sponsorship of the National Foundation for Science of the Portuguese Ministry of Science, Technology and Higher Education. With a principal address at the Departamento de Física da Universidade de Coimbra, Rua Larga, 3004-516 Coimbra ("**LIP**");

Lopes / Portugal						
Equipment	3,000	6,500				9,500
Training						
Communication & Publication						
Travel	1,350		2,450		2,450	6,250
Consumables	2,000	2,000	2,000			6,000
Other						
Stipends						
Subtotal Lopes	6,350	8,500	4,450		2,450	21,750

External Work – Publications

1916 IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING, VOL. 33, 2025

Development and Assessment of a New Multichannel Electrocutaneous Device for Non-Invasive Somatosensory Stimulation for Magnetic Resonance Applications

Carolina Travassos, Alexandre Sayal, Paulo Fonte, Bruno Direito, Luís Lopes, Nuno Carolino, Sónia Afonso, Tânia Lopes, Teresa Sousa, and Miguel Castelo-Branco

Abstract— **Non-invasive electrocutaneous stimulation, which applies an electrical current flowing through the skin's surface to elicit a tactile percept, can be used in combination with functional magnetic resonance imaging (fMRI) to obtain somatotopic maps that illustrate the spa-**

ability were assessed by testing the device on a single participant outside the MR environment. Finally, structural and functional data were acquired from three participants during a somatosensory stimulation experiment as a proof of concept to confirm the brain activity elicited by stimu-

4 more prepared, and 2 already published in the first quarter of 2026

Balance External work and Spark Chambers

Conta	Descrição	2021	2022	2023	2024	2025	Jan 2021 a Dez 2025
9814	**Outros Trabalhos Exterior**	1,383 €	5,007 €	27,820 €	19,562 €	37,036 €	**90,808 €**
981400	Receitas	4,789 €	23,789 €	45,486 €	37,749 €	56,217 €	
981401	Missões	-104 €				-103 €	
981403	Outras Despesas	-86 €	-1,146 €	-4,130 €	-989 €	-8,529 €	
981404	Compra de Materiais	-3,216 €	-17,635 €	-13,536 €	-17,198 €	-10,548 €	

Considerable amounts of material in stock from 2022 & 2023 investment

Conta	Descrição	2019	2020	2021	2022	2023	2024	2025	Jan 2019 a Dez 2025
9908	**SPARK**	**-3,119.20**	**8,484.73**	**-6,206.43**	**-908.33**	**5,906.47**	**17,585.42**	**-927.60**	**20,815 €**
990800	Receitas	2,746.03	13,135.00	0.00	0.00	15,500.00	26,115.00	0.00	
990801	Missões		-15.20	0.00	-91.68	0.00	0.00	0.00	
99081498	Outras Despesas	-5,865.23	-4,635.07	-6,206.43	-816.65	-9,593.53	-8,529.58	-927.60	

Zero Spark chambers sold in 2025