

15TH EDITION

**INNOVATIVE
TECHNOLOGIES**
IDEA CONTEST
FOR MSc STUDENTS

FRAUNHOFER PORTUGAL

CHALLENGE'24

Think Technology. Design the Future.

Fraunhofer Portugal

Fraunhofer – Gesellschaft

Fraunhofer Strategic Research Fields



Bioeconomy



Quantum Technologies



Digital Healthcare



Resource Efficiency and
Climate Technologies



Artificial Intelligence



Hydrogen Technologies



Next Generation
Computing

76
Institutes

32,000
Employees

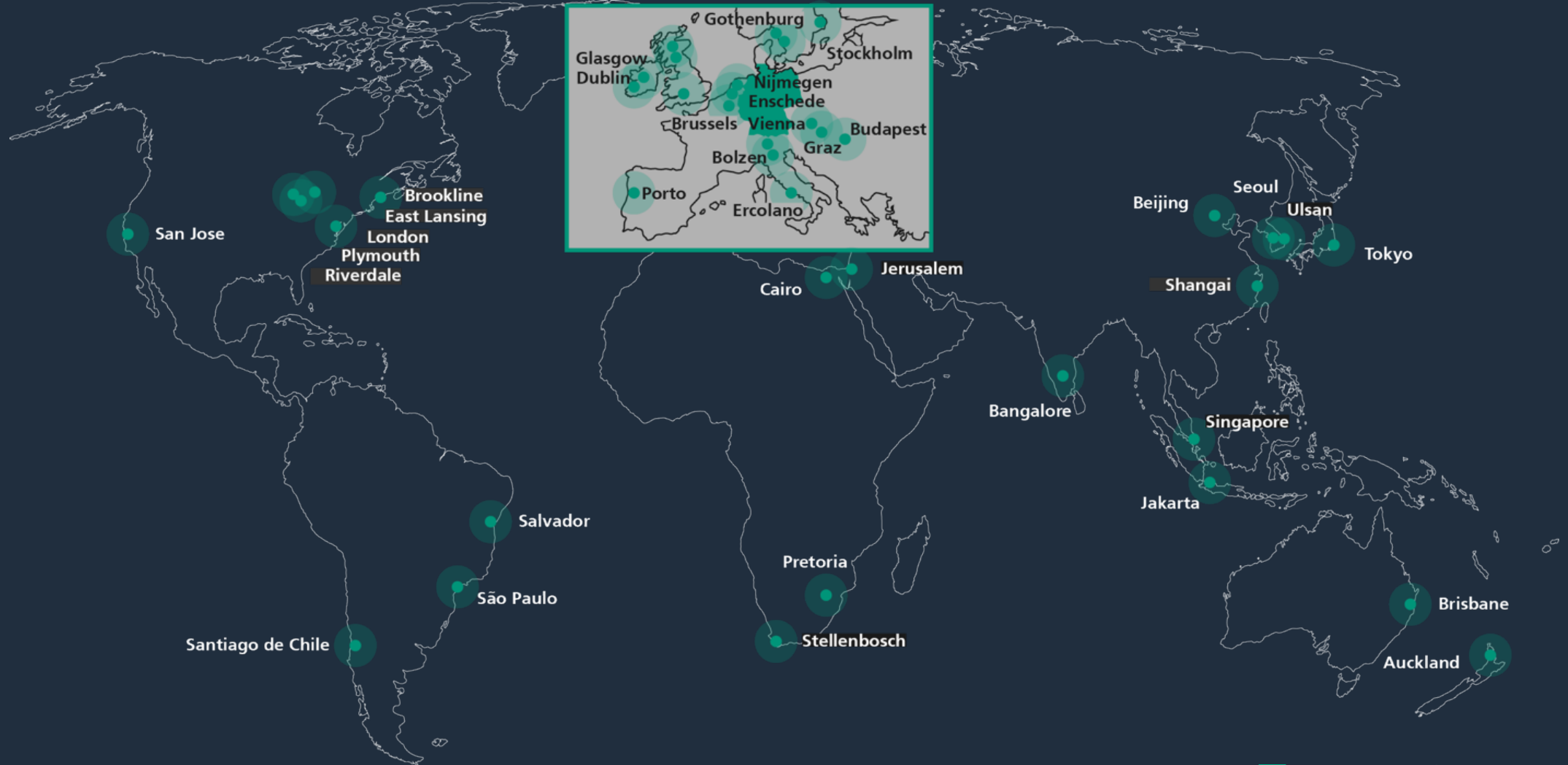
80
Research Units

€ 3.4
Billion R&D Budget

€ 3.0 Billion
Contract Research

Fraunhofer Portugal

Fraunhofer – Gesellschaft



Fraunhofer Portugal

Institutional Background

ASSOCIAÇÃO FRAUNHOFER PORTUGAL RESEARCH



Fraunhofer Portugal

Associação Fraunhofer Portugal Research

AICOS
15 YEARS

U. PORTO

UNIVERSIDADE
DO PORTO

> **2** (Porto and Lisboa)
Research Units

> **103**
Employees



AWAM
5 YEARS

utad

UNIVERSIDADE
DE TRÁS-OS-MONTES
E ALTO DOURO



UNIVERSIDADE
DE ÉVORA

> **2** (Vila Real and Évora)
Research Units

> **11**
Employees

Fraunhofer Portugal AICOS

Key Figures

+235

Industry Partners

101

Researchers &
Students

21% with Ph.D. degree

52

Achievements & Awards

(e.g. CES / Microsoft / Vodafone)

Honourable Mentions

20

Patents

16.4%

CAGR Industry
Revenues

2018-2023 (FSCT)

727

Publications

+1600

Research Participants

275

Theses

FRAUNHOFER PORTUGAL AICOS

Fraunhofer Center for Assistive Information and Communication Solutions

Fraunhofer Portugal AICOS

Vision and Mission

PROPOSING FUTURES. IMPACTING LIVES.

We create cutting-edge innovation based on end-user insights.

REMARKABLE TECHNOLOGY, EASY TO USE.

As a leading partner for industry, we create applied research solutions capable of contributing to the market success of our clients' products and services by focusing on the value for their customers.



Fraunhofer Portugal AICOS

Purpose and Scientific Areas

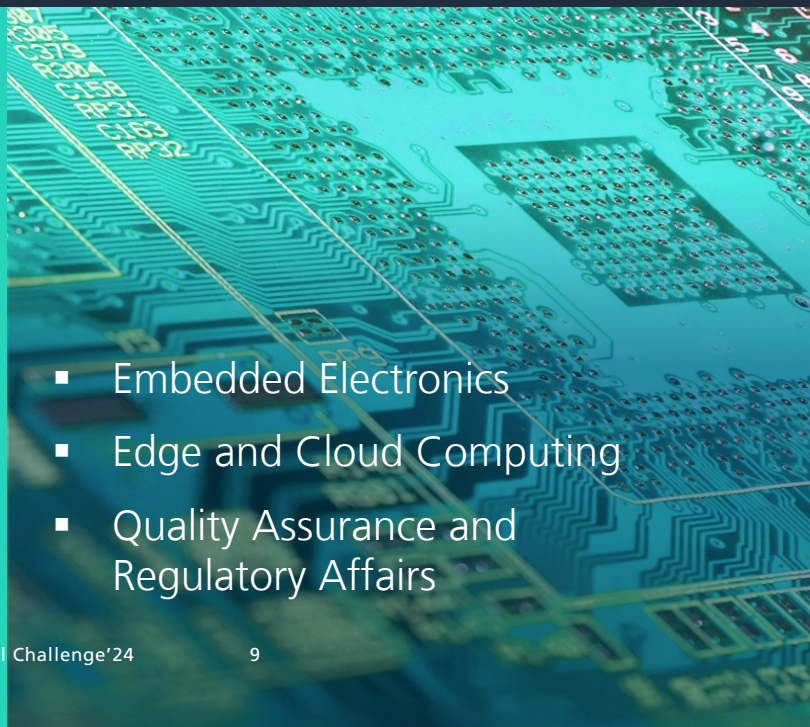
HUMAN-CENTRED DESIGN

- Design Research
- Human-Computer Interaction
- Health Technology Assessment and Implementation



CONNECTED THINGS

- Embedded Electronics
- Edge and Cloud Computing
- Quality Assurance and Regulatory Affairs



INTELLIGENT SYSTEMS

- Data-Driven Intelligence
- Learning in Low-Data Scenarios
- Trustworthy and Operational AI



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Business Areas



DIGITAL HEALTH

- Clinical practice and self-care
- Clinical evidence and regulatory compliance
- Health data management



DIGITAL INDUSTRY

- Predictive and prescriptive maintenance
- Evidence creation and process optimization
- Workplace technology for job quality improvement



DIGITAL FUTURES

- Artificial Intelligence-ready technology
- Resource-efficient cyber-physical systems
- Speculative design

Fraunhofer Portugal seeks to encourage cooperation between industry and the scientific community, motivating and rewarding research of practical utility.



Fraunhofer Portugal Challenge

Idea Contest

PROMOTE 'RESEARCH OF PRATICAL UTILITY'

Among Portuguese University Students and Researchers

IDEA CONTEST FOR MSc STUDENTS

On its 15th edition, the Challenge awards MSc students through two categories: the Master Thesis Award (based on the master thesis) and the Student Award (promising idea aligned with FhP-AICOS' scientific areas).



NEW CATEGORY: STUDENT AWARD

In addition to the already existing MSc Thesis Award, the Student Award acknowledges the student with the most promising idea with a money prize and mentoring from FhP-AICOS' research team.

SCIENTIFIC AREAS

- Human-Centred Design
- Artificial Intelligence
- Cyber-physical Systems

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Deadlines for 2024 – Master Thesis Award

1st Phase

- **Idea submittal period:** June 17th to July 21st
- **Announcement of the 1st round results:** August 5th

2nd Phase

- **Additional documentation submittal period:** August 6th to August 15th
- **Announcement of the 2nd round results:** September 2nd

3rd Phase

- **Fraunhofer Portugal Challenge Closing Event:** September 25th
(public presentation of finalist ideas and definition of 1st, 2nd and 3rd places in Master Thesis Award)

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Deadlines for 2024 – Student Award

- **Idea submittal period:** June 17th to July 21st
- **Announcement of the results and winning idea:** Until September 5th
- **Beginning of the mentoring work:** Until September 9th
- **Fraunhofer Portugal Challenge Closing Event:** September 25th
(public presentation of the winning idea and overview of the mentoring work and experience)

Fraunhofer Portugal Challenge

2023 Edition

Winning ideas in the MSc and Student categories

Master Thesis Award Winners

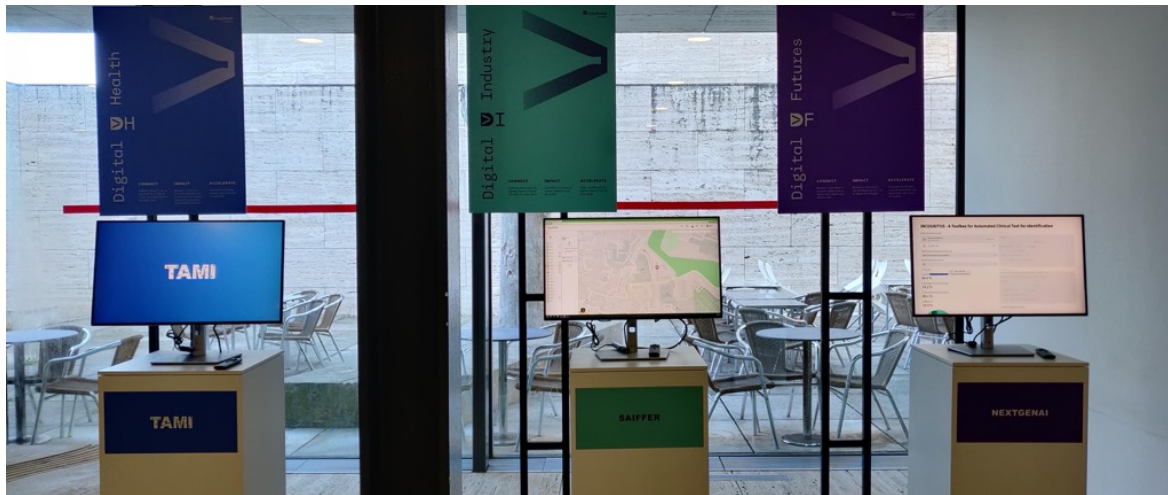
- **1st** : New architecture for rotational self-adaptive electromagnetic energy harvester;
- **2nd** : Augmented reality environment for oncoplastic breast surgery;
- **3rd** : Leveraging group equivariance to build geometric interpretability for trustworthy machine learning.

Student Award Winner

- An interactive orrery for cognitive stimulation of adults with intellectual disability.

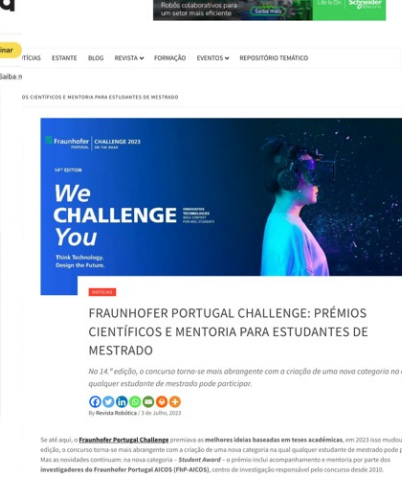
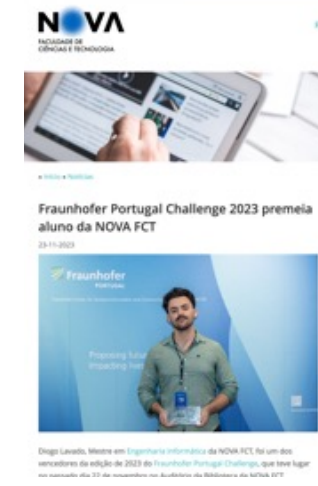
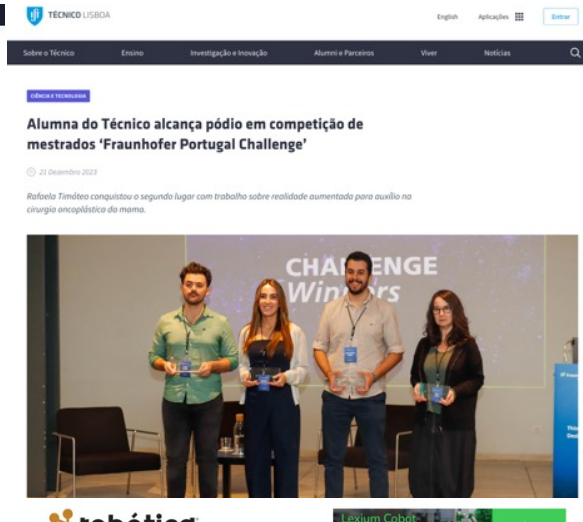
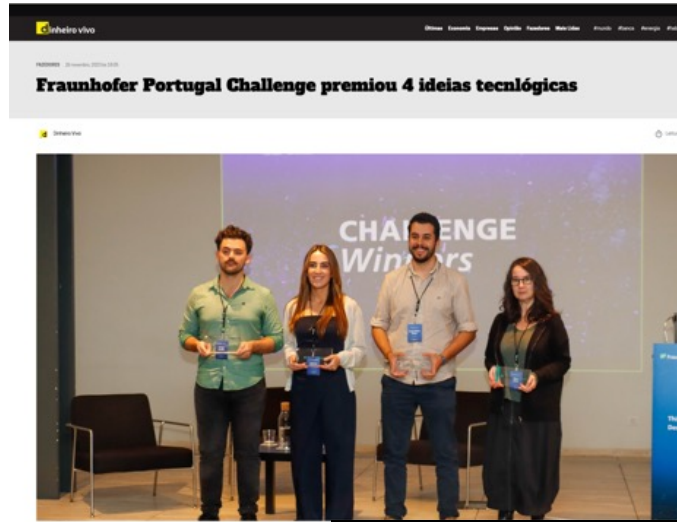
Fraunhofer Portugal Challenge

2023 Edition – Closing Event



Fraunhofer Portugal Challenge

2023 Edition – Media coverage both for winning Students and Universities



Fraunhofer Portugal Challenge

Testimonials

“

Winning Challenge 2023 was a very important recognition for me, and proof that the dedication, effort and work we put into the tasks we do is worth it, it pays to go the extra mile and challenge ourselves to do better and meaningful things. Thank you Fraunhofer Portugal AICOS for providing the encouragement that motivates people to keep going.”

José Pedro

1st place winner in the MSc Award for her idea
"New architecture for rotational self-adaptive electromagnetic energy harvester."



Fraunhofer Portugal Challenge

Testimonials

“

It was really nice to realise that my idea made sense and was recognized as being a good concept, a good idea, and on the other hand to realise that I could have help in continuing to develop it.”

Filipa Alves

Student Award Winner for her idea

"An interactive orrery for cognitive stimulation of adults with intellectual disability."



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