

FRAUNHOFER PORTUGAL

INSTITUTIONAL PRESENTATION

RESEARCH OF PRATICAL UTILITY

Fraunhofer Portugal

Fraunhofer – Gesellschaft

Fraunhofer Strategic Research Fields



Bioeconomy



Quantum Technologies



Digital Healthcare



Resource Efficiency and
Climate Technologies



Artificial Intelligence (AI)



Hydrogen Technologies



Next Generation Computing

76
Institutes

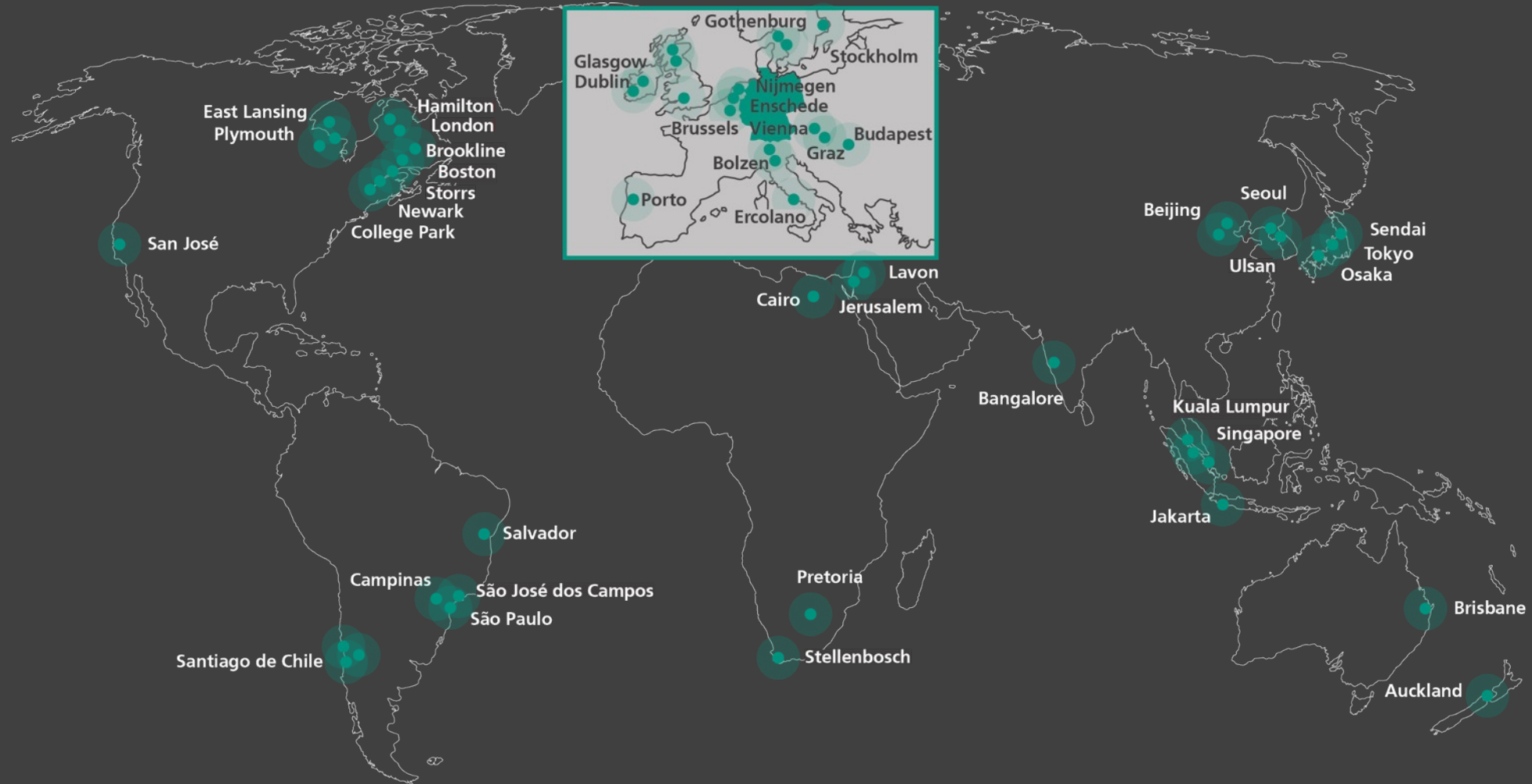
> 80
Research Units

> 30,800
Employees

> € 3.0 billion
R&D Budget
(€ 2.6 billion contract research)

Fraunhofer Portugal

Fraunhofer – Gesellschaft



Fraunhofer Portugal

Institutional Background

ASSOCIAÇÃO FRAUNHOFER PORTUGAL RESEARCH



Fraunhofer Portugal

Associação Fraunhofer Portugal Research

AICOS

14 YEARS

U. PORTO

UNIVERSIDADE
DO PORTO

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

> **106**
Employees



AWAM

4 YEARS



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

> **13**
Employees

Fraunhofer Portugal

Key Figures

+200

Industry Partners

113

Researchers &
Students

43

Achievements
Awards
(e.g. CES / Microsoft / Vodafone)
Honourable Mentions

447

Publications

+1,000

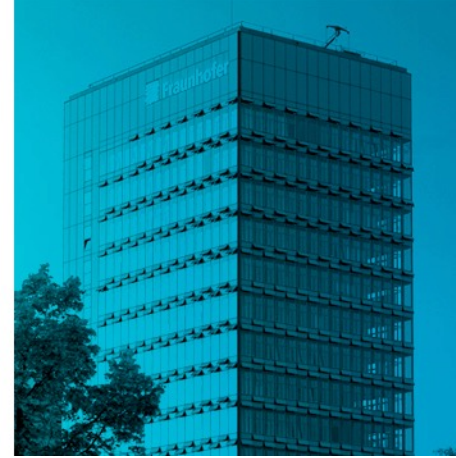
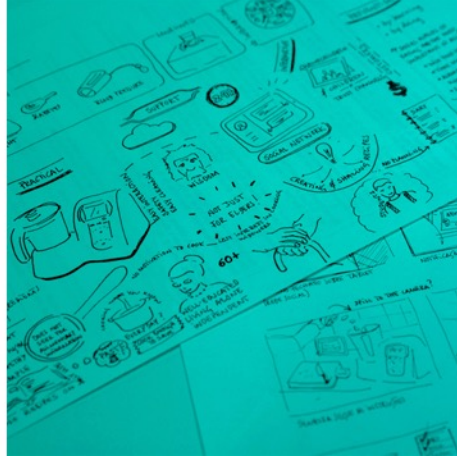
Research Participants

+200

Theses

Fraunhofer Portugal

What can we do for you?



R&D CONSULTING

- We propose new solutions and ideas for evolving products and services

PROOFS OF CONCEPT

- Initial implementation for proving that new ideas really work

PROTOTYPE IMPLEMENTATION

- Architectural specification
- System implementation
- System testing and validation

EASY ACCESS TO OTHER GERMAN FRAUNHOFER INSTITUTES

- 8 Research Groups
- More than 80 Research Units
- 75 Institutes

MEMBER OF NATIONAL SCIENTIFIC AND TECHNOLOGY SYSTEM

- Eligible to participate in public incentive R&D programmes

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



INTELLIGENT SYSTEMS

- Edge and Cloud Computer Vision
- Sensor Fusion & Embedded Intelligence
- Cognitive Systems & Deep Learning
- Predictive Modelling & Recommendation



CONNECTED THINGS

- Embedded Electronics
- Communication and Networks
- Edge and Cloud Computing
- Quality Assurance & Regulatory Pre-Compliance



HUMAN-CENTRED DESIGN

- Understanding people in diverse settings
- Co-designing meaningful technologies
- Technology assessment in real life

Fraunhofer Portugal AICOS

Innovation Themes



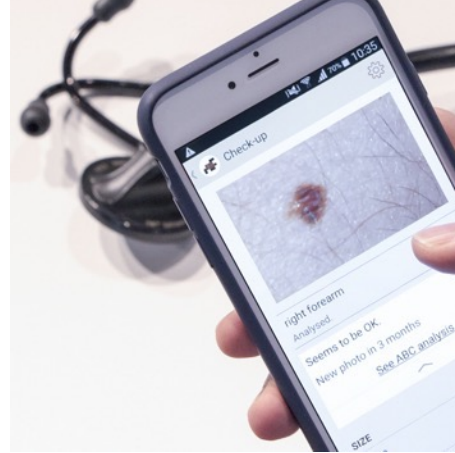
COGNITIVE CONNECTED SOLUTIONS

- Letting everything sense
- Prediction and recommendation
- Natural user experience



DIGITAL FARMING

- Decision support
- Mobile crowdsensing
- Efficient and self-managed networks



ACCOUNTABLE ARTIFICIAL INTELLIGENCE

- Explicability, transparency, and bias
- Accountability and ethics
- Fairness and inclusion through technology



DECENTRALISED HEALTH TECHNOLOGY

- Prevention
- Support to early diagnosis and intervention
- Affordable cutting-edge technology



LIVING AND AGEING WITH DATA

- Personalised technology
- Socio-technical systems
- Technology design by non-technologists

FRAUNHOFER PORTUGAL AWAM

Fraunhofer Center for Smart Agriculture and
Water Management

Fraunhofer Portugal AWAM

Vision and Mission



CUSTOMER FOCUS to provide solutions for a sustainable **CIRCULAR ECONOMY** in the fields of water, energy, and nutrients.

Recognized **SCIENTIFIC INSTITUTION** in the area of process and environmental technologies and a strong **DEVELOPMENT PARTNER** for Portuguese and European companies.

Fraunhofer Portugal AWAM

Purpose and Scientific Areas



SUSTAINABLE CROP PRODUCTION

- Transportable and storable fertilizers
- High quality products with defined properties
- Agriculturally usable irrigation and fertirrigation



WATER TREATMENT

- Inorganic membranes
- Electrochemical treatment methods
- Efficient advanced oxidation processes
- Process-integrated water quality monitoring

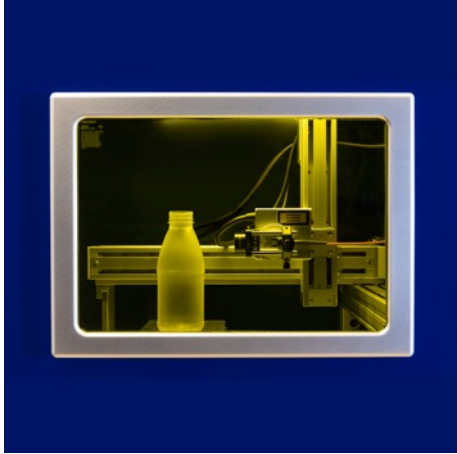


BIOMASS ENERGY

- Biogas treatment
- Bio methane production
- CO₂ separation
- Energy storage
- Electrification, automation

Fraunhofer Portugal AWAM

Technologies



DOSIMETRY

- Radiation-sensitive ceramic phosphors as dosimeter material for E-beam
- 3D dosimetry on any surface geometry possible



ETHANOL TREATMENT

- Membranes and membrane processes for (bio)ethanol production, membrane distillation, dewatering, and similar processes



GAS SEPARATION

- Gas separation by ceramic membranes, e.g. at elevated temperatures
- Biogas upgrading, membrane reactors, pervaporation applications



LIQUID FILTRATION

- Nano- and ultrafiltration, e.g. for water treatment, nutrient and raw material recovery, dairy products, ...
- Standard filtration applications e.g. for biodigestion, ...



TRACE SUBSTANCES MONITORING

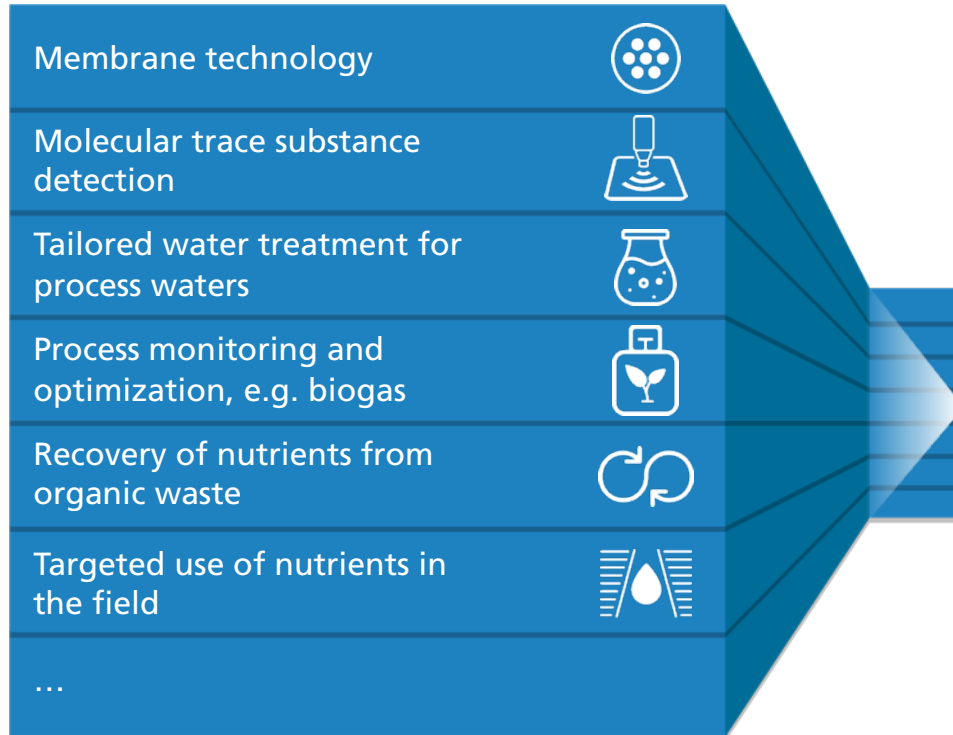
- Optical biosensor design, adaptation and process integration
- Real-time detection of pollutants in low concentration ranges in water or liquid products

How do the research centres come together to answer your needs?

AWAM – AICOS Ecosystem

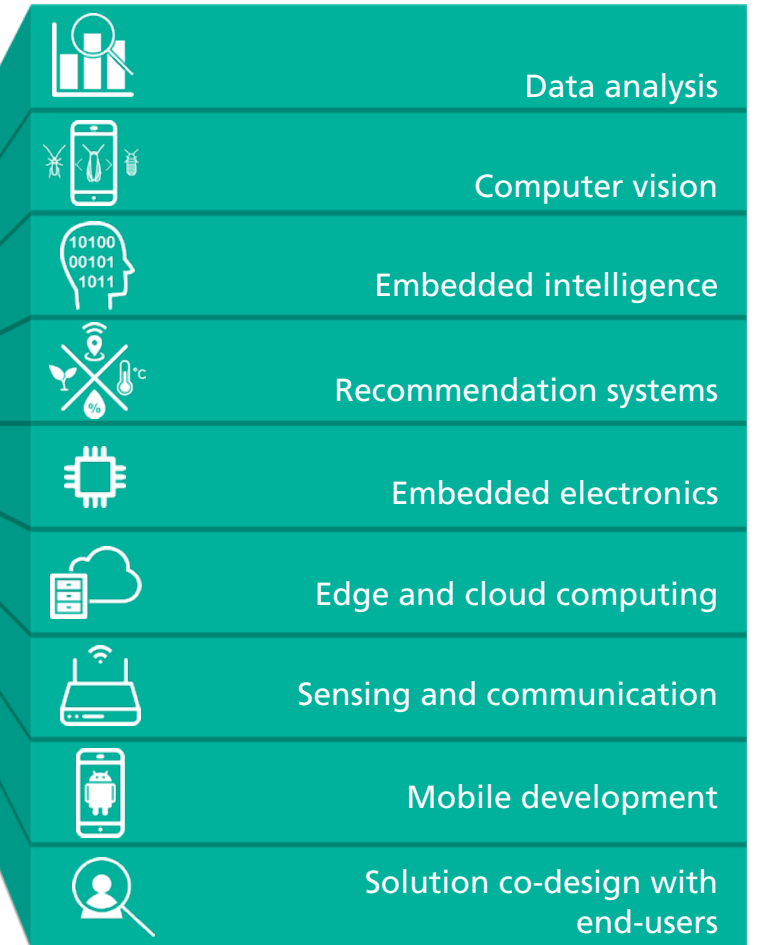
How do the research centres come together to answer your needs?

AWAM



TO DELIVER:
**SMART AGRICULTURE
WATER MANAGEMENT**

AICOS



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 14th 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

Fraunhofer Portugal – AHEAD Portugal

Technology Transfer, Entrepreneurship & Innovation Program

TECHNOLOGY TRANSFER PROGRAM

The first technology transfer, entrepreneurship, and innovation programme launched by Fraunhofer Portugal in September 2020

AHEAD LEGACY

Inspired by the equivalent German programme, AHEAD Portugal aims at translating world-class technology into successful startups and take innovative ideas to market, by incubating spin-offs and concluding licensing agreements based on Fraunhofer technologies



STAKEHOLDERS' NETWORK

Tailored to challenge and promote complementary teams, establish actionable roadmaps, nurture pitching skills and intensively expose teams and tech to a broad external stakeholders' network

BASED ON FRAUNHOFER TECH

Addressed to the employees of Fraunhofer Portugal, the 1st edition of the programme comprised six participating teams, in a total of 16 people

THANK YOU

PORTO – Headquarters

Address: **Rua Alfredo Allen 455/461**

4200-135 Porto | Portugal

Phone: **+351 220 430 300**

Website: **www.fraunhofer.pt** | E-mail: **info@fraunhofer.pt**
