

The ELI/Lasers PT science ecosystem

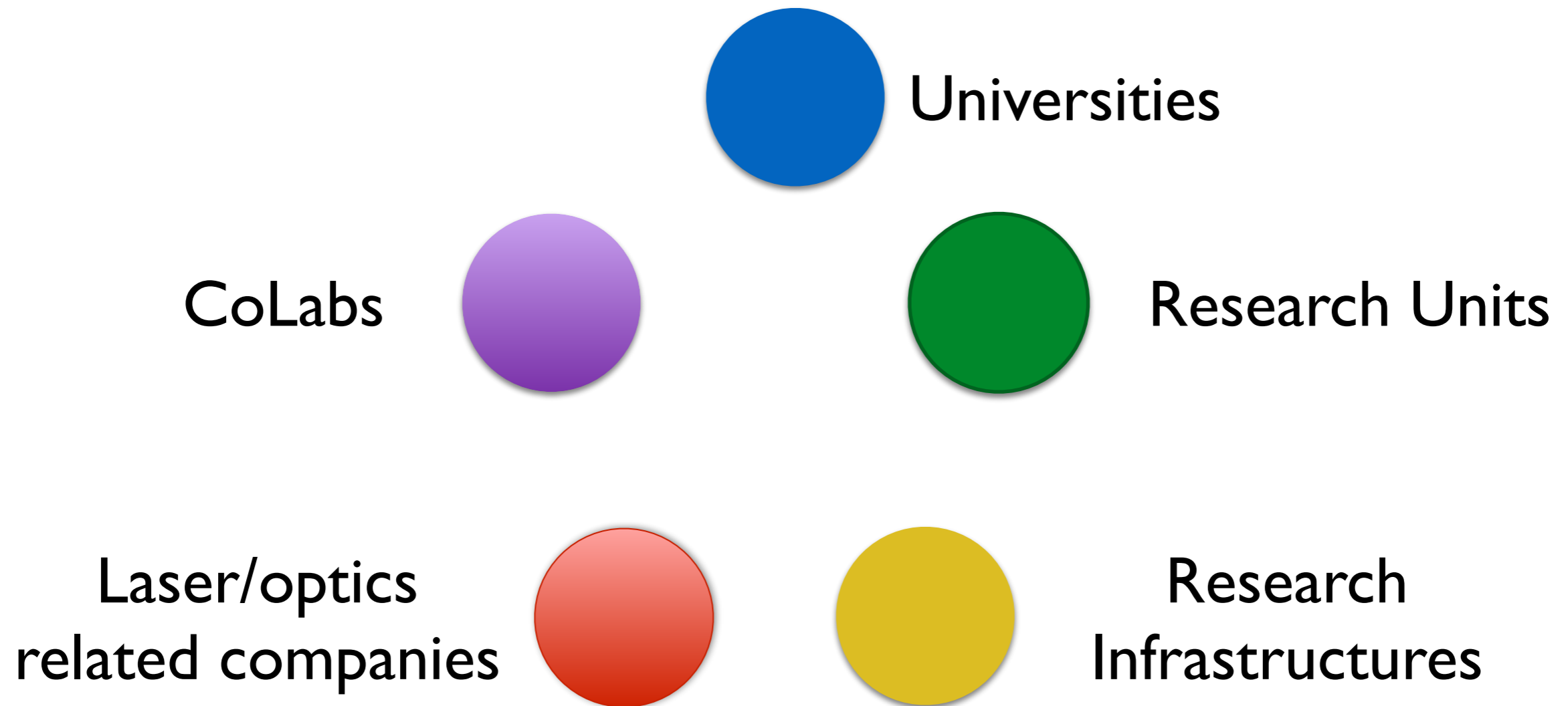
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IMPULSE



An overview of scientific production + patents



Landscape of the top universities in Portugal is dominated by public institutions

Strong possible ELI connection in at least three universities (within several schools)

Associated Laboratories

40 large scale R&D units with top marks by PT Science Foundation evaluation process + strategic relevance



ipfn

INSTITUTO DE PLASMAS E FUSÃO NUCLEAR



CIQUP

Involved since the early stages



IMS



LaPMET

Associated Laboratories with close ELI activities

312 R&D units recognised/funded by the PT Science Foundation (29 in Physics, Chemistry, Materials+Nanotech)

PORTUGUESE ROADMAP OF RESEARCH INFRASTRUCTURES – 2020 Update

FCT – Fundação para a Ciência e a Tecnologia

LLPT LASERLAB-Portugal

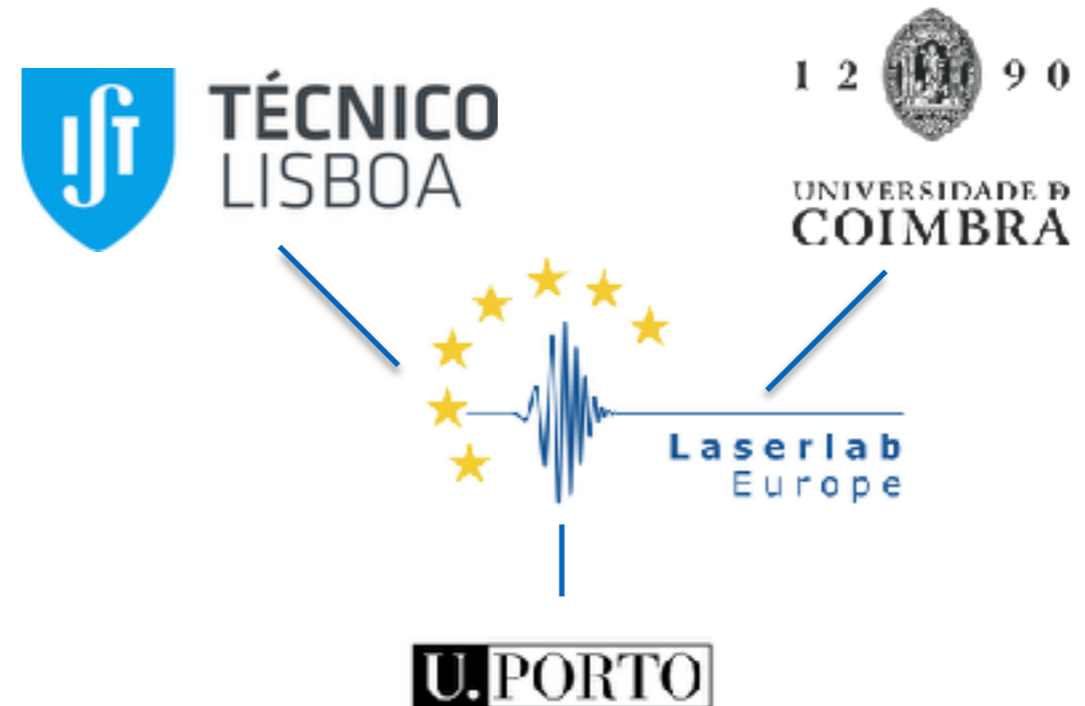
TYPE
Distributed

RI COORDINATOR
Gonçalo Figueira (IPFN/IST/UL)

**YEAR OF ENTRY IN THE
NATIONAL ROADMAP**
2014

INSTITUTIONAL PARTNER(S)/NODE(S)
Instituto de Plasmas e Fusão Nuclear do Instituto Superior Técnico (IPFN/IST/UL); Universidade de Coimbra (UC).

WEBSITE
www.ipfn.tecnico.ulisboa.pt/llpt



RNCA	National Advanced Computing Network	Virtual	Fundação para a Ciência e a Tecnologia I.P. - Unidade de Computação Científica Nacional (FCT FCCN)	2019	EuroHPC , RICA
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Also INL & NanoTech + NanoPhotonics

YSIUM, LDA

Surface treatment, laser engraving

<https://ysium.com/>

SPHERE ULTRAFast PHOTONICS, S.A.

Ultrafast diagnostics and devices

<https://www.sphere-photonics.com/>

MWTECHNOLOGIES, LDA

Optical sources and amplifiers, fibre optics

<http://www.mw-technologies.com/>

LINKLAB, LDA

Soluções em fibra óptica

<http://linklab.pt/>

OPTILINK, LDA

Optical cable assembly

<https://optilink.netlify.app/>

Keen Photonics - Sistemas Ópticos Avançados, Lda

N/A

Lasermaq

Comercialização e desenvolvimento de produtos laser

<https://www.lasermaq.pt/>

Laserleap

Non-invasive skin laser treatments

<https://www.laserleap.com/>

A comprehensive survey of PT laser/optics related companies has been compiled by Prof. Gonçalo Figueira (> 80 companies, not all shown here)

Other companies have a long standing tradition of collaboration with large scale science infrastructures in Europe (e.g. CERN, ITER, etc.)



Collaborative Laboratories should be established as **non-profit private associations** or as **companies**. Goal: to create skilled and scientific jobs in Portugal, both directly and indirectly, by implementing research and innovation agendas geared at creating economic and social value.

CoLABs must meet the challenge of enhancing the density of knowledge-based activities in the country by fostering the consolidation of **collaborative practices between scientific, technological or higher education institutions and the social and economic fabric, namely businesses, the hospital and health care system, cultural institutions, and social organizations.**

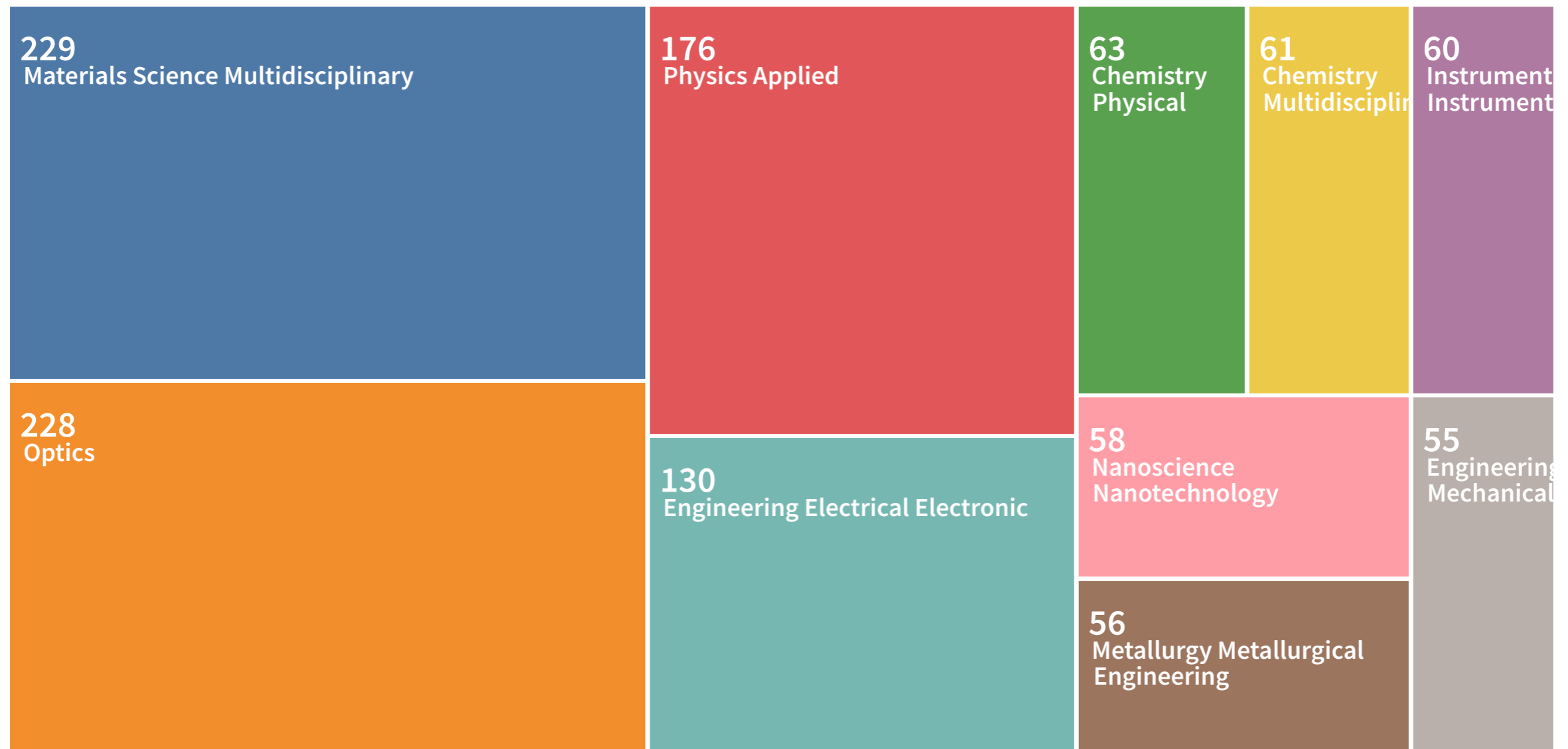
Collaborative Laboratories must consist of at least one company and one R&D unit

CoLABs may include companies, non-corporate R&I organizations, Higher Education Institutions (through their R&D Units), Technological Interface Centers and other intermediate or interface institutions, business associations, other public administration organizations, and other partners within the productive, social or cultural fabric.

35 CoLabs: MORE, CoLAB Vinha e Vinhos, DTx, ForestWISE, CoLAB +Atlântic, GreenCoLAB, CoLABOR, AlmaScience/Colab, BIOREF, C5Lab, Value4Health.CoLAB, CECOLAB, SFCoLAB, NET4CO2, ProChild, InnovPlantProtect, S2uL, CoLab4Food, B2E, VectorB2B, VORTEX, VG CoLAB, Food4Sustainability, BUILT CoLAB, Smart Energy LAB, InovFeed, AquaValor, S2AQUAcoLAB, HyLAB, KIPT, CoLAB TRIALS, BioScale, Data CoLAB, Healthy Ageing@LAB e 4LifeLab

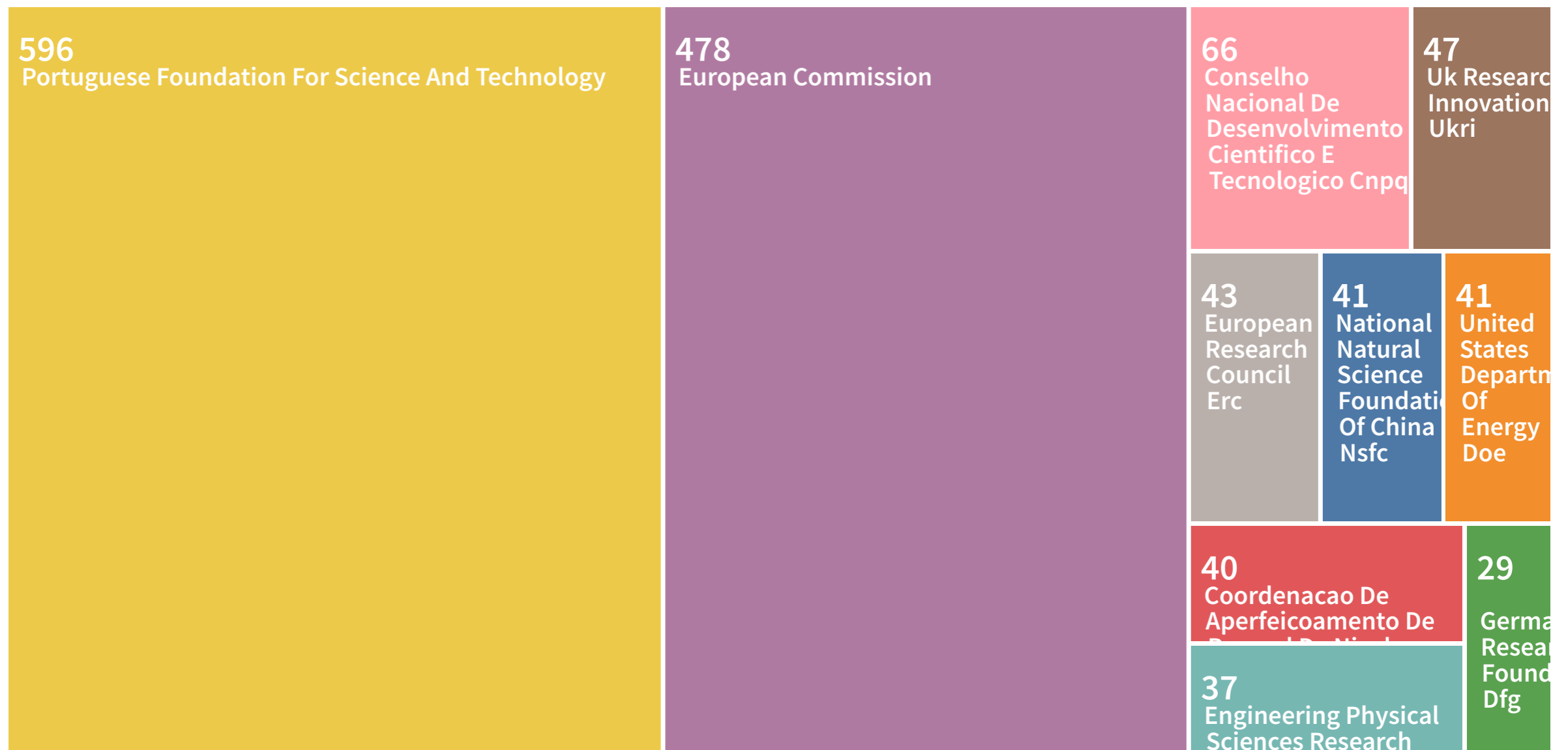
PT + Last 5 years + Web of Science + abstract: laser*

Web of Science Categories



PT + Last 5 years + Web of Science + abstract: laser*

Funding



A wide range of institutions ranging from universities, R&D centres, companies (both SMEs and large companies)



Discussions with Ministry of Science, Tech and Higher Education (Prof. Heitor) evolved significantly in 2021

Dialogue restarted right after nomination of new Ministry (Prof. Fortunato)

Recently received feedback on state of consideration - waiting for new administration of Portuguese Science Foundation to initiate operations



A landscape with multiple possible connections to ELI, grounded on tradition of engaging with ELI since the start of the concept + ability to leverage competitive EU funding/EU networks

A significant number of institutions with a relevant footprint in lasers, optics, and applications, and with expertise in connecting with big science projects

Opportunity to explore further connections with other sub-fields leveraging privileged channels with ELI that are already in place

