Philip Burrows, Director, John Adams Institute for Accelerator Science

University of Oxford

Thanks to: Thomas Brent, Nicolas Delerue, Tord Ekelof

5th I.FAST Annual Meeting, 21.10.2025

WP2 mission and objectives

Mission:

- Create an innovation-based community for particle accelerators, and outreach to public

Objectives:

- Develop a communication strategy for particle accelerators
- Set up a Challenge-Based Innovation (CBI) scheme
- Launch an Industrial Training scheme associated with Knowledge Transfer (KT)

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Task 2.2: impact on communications & outreach

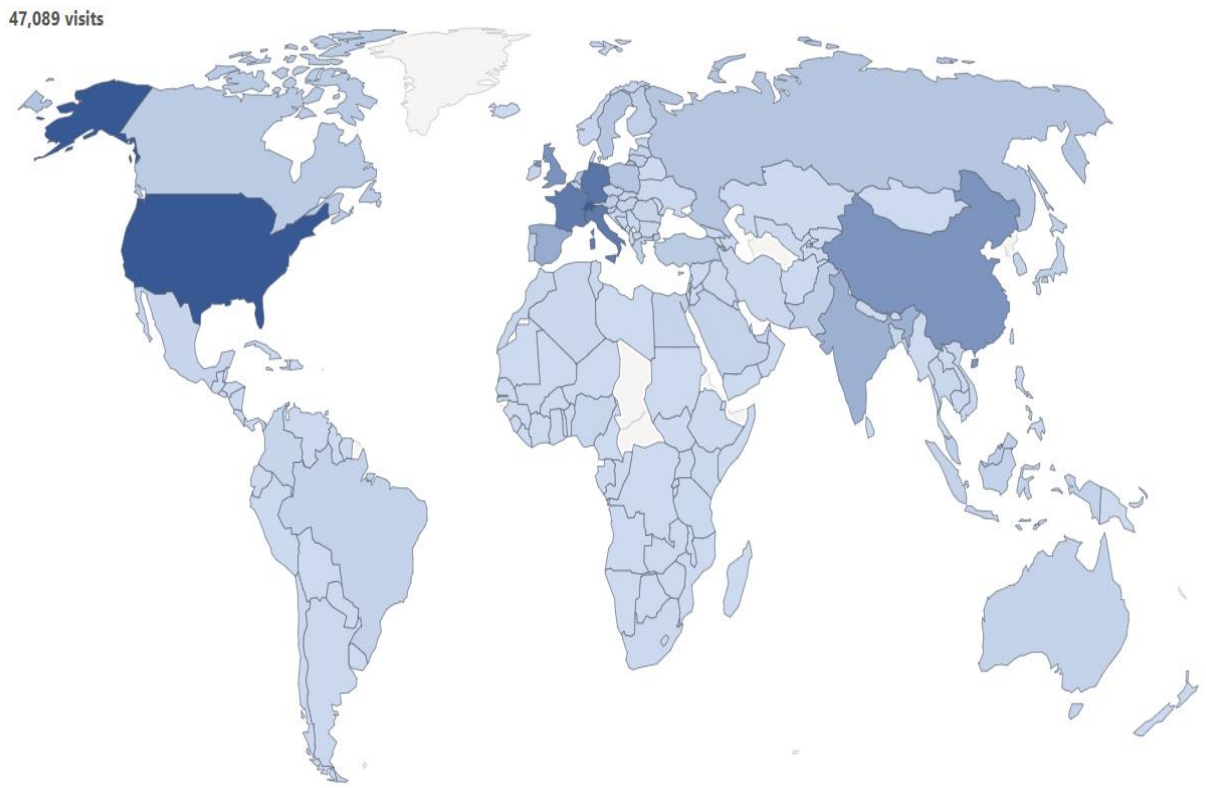
(slides from Thomas Brent)

- Website
- News articles
- Social media
- Events
- Accelerator communication and outreach workshops
- Challenge Based Innovation events

Website: impact

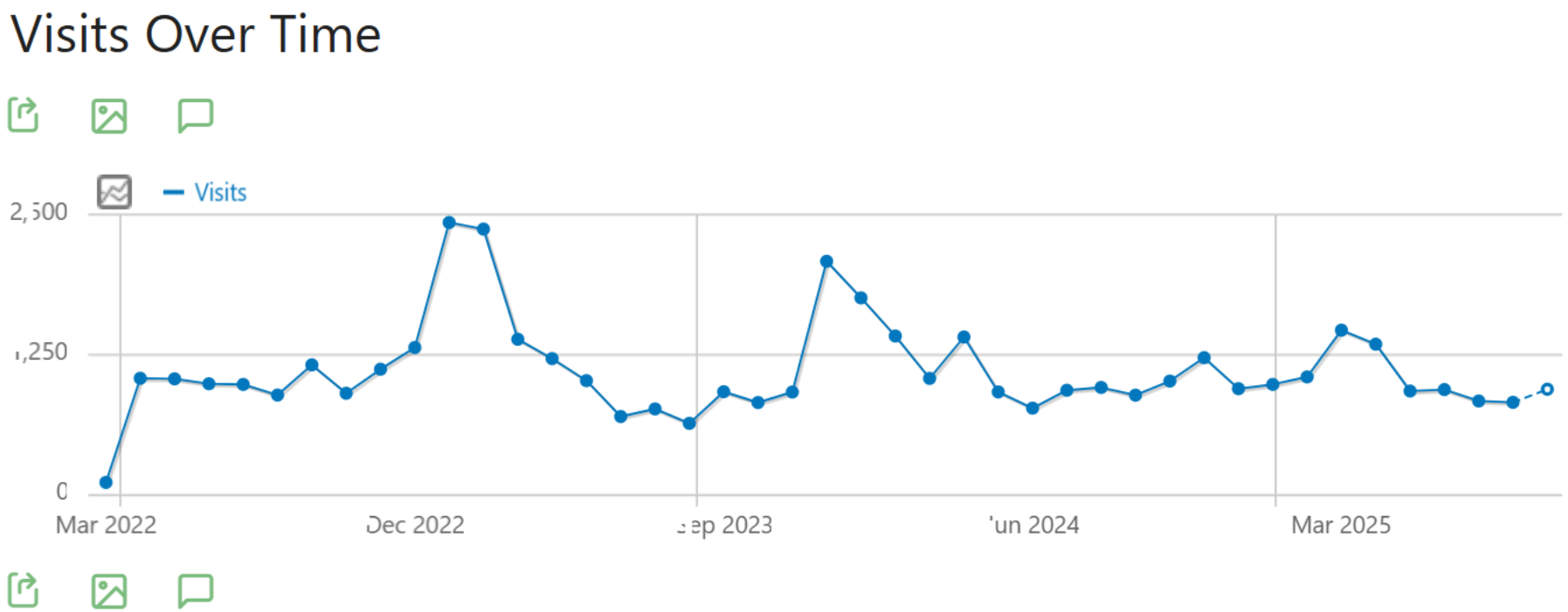
- Since March 2022 (data first recorded), the I.FAST website has had over **47,000** visitors. For context, comparable EU project websites record around 10,000.
- Of these, over **21,000** were unique visitors
- They came from **186** distinct countries
- The website gets around **1,000** visits per month
- The news section has had over **11,100** unique visitors
- The events page has had over **4,800** unique visitors

Visitor Map



Continent

CONTINENT	VISITS
Europe	29,854
Asia	8,859
North America	6,027
Africa	1,082
South America	635
Oceania	325
Central America	134
Unknown	30
Antarctica	1



Visits by month since March 2022, with peaks around 2,500 and an average of 1,000

News articles: project website

- 43 news articles and updates on the project website

Popular article / update	Page views
How can particle accelerators address environmental issues? A 10-day challenge for multidisciplinary teams of young people!	3,189
How can particle accelerators help to improve human health? A 10-day challenge for multidisciplinary teams of young people!	2,639
First 3D-printing of crucial component to bring accelerators closer to society	548
Particle accelerators to accelerate circular fashion	391
Rare earths for permanent magnets: blessing or curse?	295

News articles: Accelerating News

- **37** articles / updates about I.FAST on Accelerating News
- The most visited topic page (out of 9) is I.FAST, with **+2,700** page views since March 2022. This is 400 more views than the next most popular category, the FCC.

Accelerating News: popular I.FAST articles

Popular article	Page views
€1M innovation fund for sustainable accelerators	536
I.FAST holds its third annual meeting in Paris	502
Bridging research and industry: The Accelerator Science and Technology Industry Permanent Forum	407
Thin films for accelerators, or why physicists need to learn some chemistry…	395

News articles: other sources

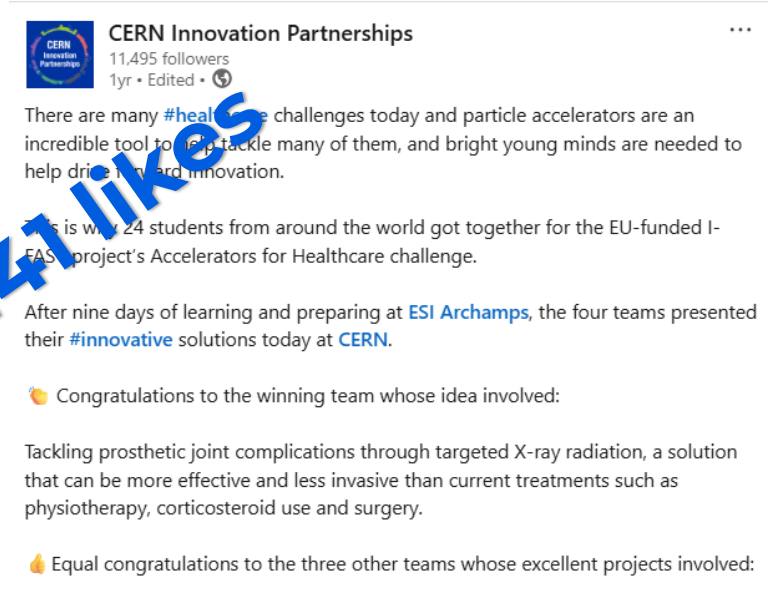
- Sustainable accelerator project underway – **CERN Courier**
- I.FAST presents the first particle accelerator produced in 3D metal synthesis – **CNRS**
- TRUMPF shows off completed copper RFQ for CERN I.FAST project – **Voxel Matters**
- Accelerating circular fashion – **CERN home**
- The Italian future of accelerators – from FCC to NRRP – **INFN**
- Advancing accelerator science and technology in different ways – **European Commission: CORDIS**

Social media

- Despite I.FAST not having its own social media channels, project news has been shared widely by beneficiaries

372 likes

141 likes



303 likes

Events

- Over 100 events organised, internal and external
- Links made with industry and public
- Expert events to bring science community together around a chosen topic

- Two high-temp superconductor for accelerator technology events
- Industry workshop of cryogenics in big science
- I.FAST Accelerator-Industry co-innovation workshop
- Workshop on efficient RF sources
- Big Science Business Forum 2024
- Several IPACs

Accelerator communication and outreach workshops

The goal was to:

“Engage the network of communication officers from the major institutes of the European accelerator community in knowledge-sharing and in developing closer collaborative ties”

Previous editions organised under ARIES

November 2018:
https://indico.cern.ch/event/760778/

February 2020:
https://indico.cern.ch/event/877001/

The 2025 workshop

www.indico.cern.ch/event/1474373

- Theme of ‘scientific competitiveness’
- 15 participants from 10 accelerator facilities attended
- 3 expert speakers
- 2 days of discussions and networking

Participants of the I.FAST ACO workshop 2025
on a tour of CERN’s Antimatter Factory

Outcomes

- An excellent opportunity to speak openly with peers from other accelerator facilities – we share similar challenges!
- An understanding that comms teams at accelerator facilities need to keep up with political shifts in research & innovation
- We now have a private LinkedIn page to keep in touch and grow the network of comms officers
- An article about the workshop published in Accelerating News in June, and a short snippet in the CERN Courier.
- We are planning future events and exchanges to keep up the networking

Task 2.3: Challenge Based Innovation

(Nicolas Delerue will give a dedicated report tomorrow)

- These events have been fantastic at promoting I.FAST, and particle accelerator science in general.
- Huge impact on social media, strong media coverage
- Feedback from the student participants shows how highly they value the opportunity, and how much they have learned about accelerator science.

PARTICLE ACCELERATORS FOR THE ENVIRONMENT

Join a ten-day challenge for senior bachelor's & master's level students (all backgrounds)

In Archamps, France (near Geneva, Switzerland)

From 26 July to 4 August 2022

APPLY NOW

Deadline: 14 February 2022
More details: www.ifast-cbi.particle-accelerators.eu

iFAST · JCLab Irène Joliot-Curie · Université Paris-Saclay · cnrs · CERN · esi European Scientific Institute · University of Oxford

Philip Burrows, Director, John Adams Institute for Accelerator Science
University of Oxford

Bob Holland (ESI), Elias Metral (CERN), Louis Rinolfi (ESI),
Maurizio Vretenar (CERN) and Nicolas Delerue (CNRS)

IPAC, Venice, 10.05.2023

2022 CBI

European Commission | CORDIS EU research results

English EN

HOME | RESULTS PACKS | RESEARCH*EU MAGAZINES | PODCASTS & NEWS | PROJECTS & RESULTS | ABOUT US | SEARCH

News > Scientific advances

DE EN ES FR IT PL

Accelerating solutions for the environment

In the summer of 2022, an EU-backed project challenged students to find novel environmental and societal applications for particle accelerators.

CLIMATE CHANGE AND ENVIRONMENT

© WorldStockStudio/Shutterstock.com

In what ways can particle accelerators tackle environmental issues? Looking for fresh ideas, the EU-funded I.FAST project brought together students from all over Europe to explore new solutions.

The 10-day challenge was the first edition of I.FAST's Challenge-Based Innovation (CBI) programme. Held at the European Scientific Institute in Archamps, France, from 26 July to 4 August, it gathered 23 students covering 17

Related projects

HORIZON 2020

PROJECT

I.FAST

Innovation Fostering in Accelerator Science and Technology

31 December 2022

GOING CIRCULAR / ACCELERATORS

Particle Accelerators Can Accelerate Circular Fashion by Segregating Fabric Components

Fabric blends in clothing could soon be sorted easy if a proposal by a multi-disciplinary team of students to use an electron beam to segregate different fabric components through electrostatic separation finds takers.

Long Story, Cut Short

- The winning 'FabRec' team's idea was to apply particle accelerators to treat textile waste.
- Currently, only 1% of textile waste is recycled into new clothes.
- The EU-funded I.FAST project gathered highly motivated students from all across Europe to imagine how particle accelerators could address novel environmental issues.

Discover more
Textile accountability software | Textile waste management systems | Garment industry analysis
textile | Textile manufacturing equipment | Better Cotton Initiative | Higg MSI training courses
Textile fashion website | Antiviral fabric treatments | Textile recycling technology

FAST ACCELERATION: The 2023 edition of its Challenge-Based Innovation (I.FAST-CBI) project was held at the European Scientific Institute (ESI) in Archamps, near Geneva. This year, the jury was convinced by the idea of applying particle accelerators to treat textile waste. CERN

2023 CBI

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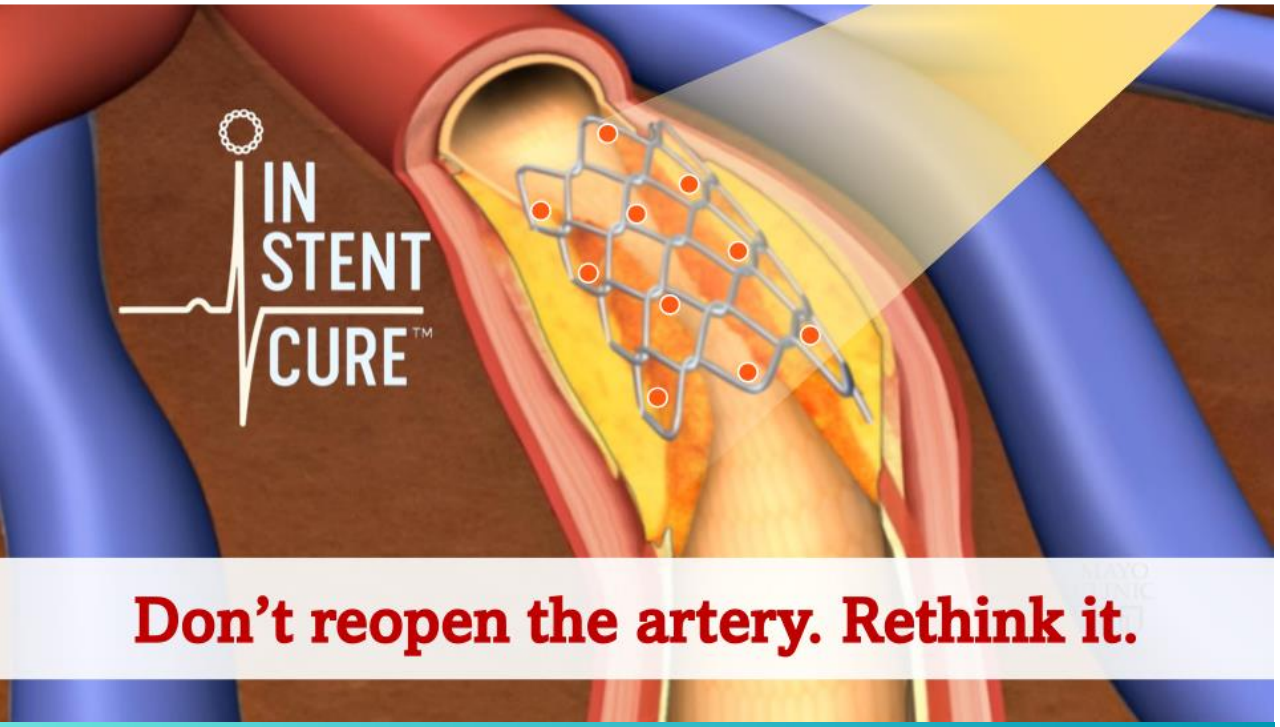
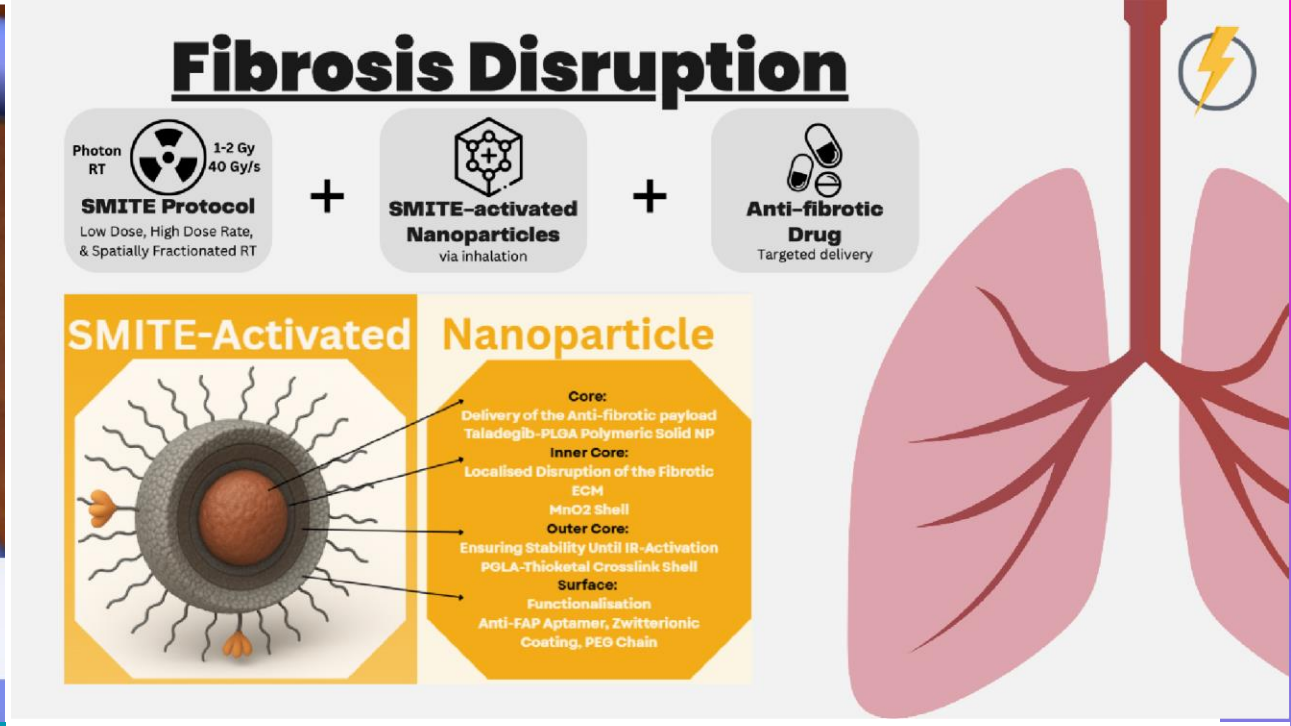
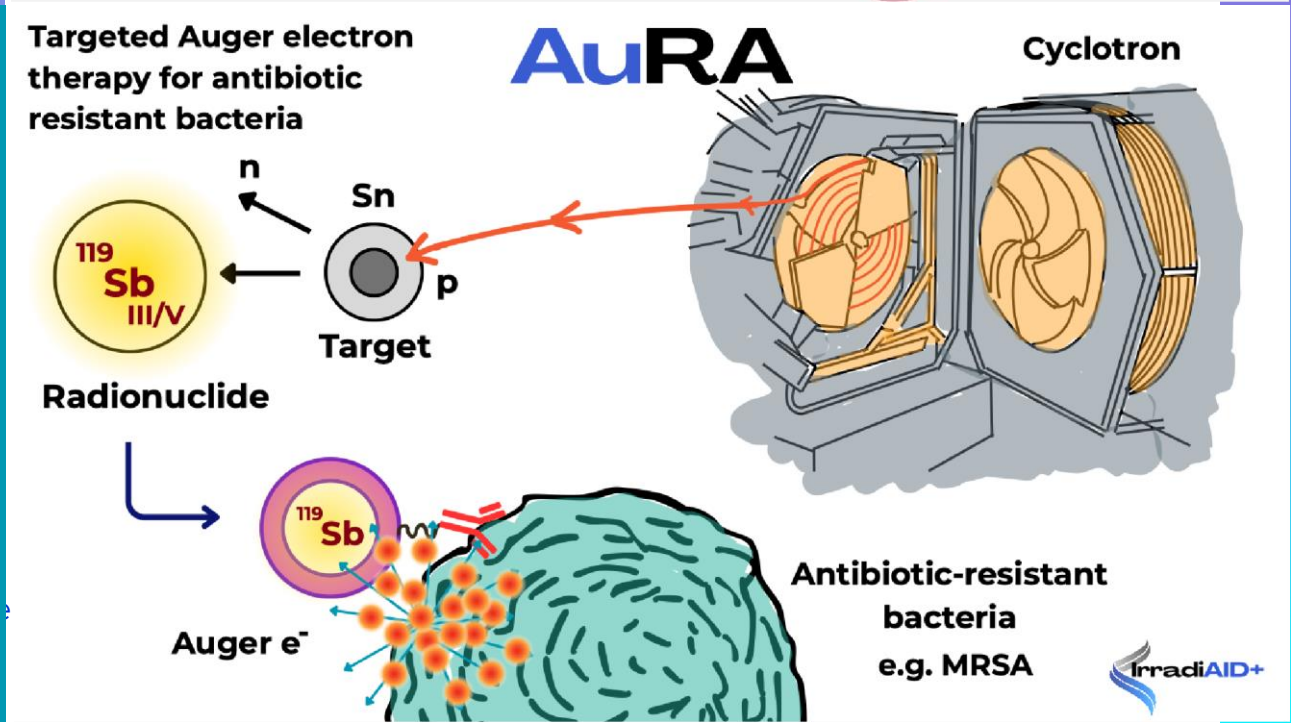
Thermo-Relief: C-Arm for Accelerating the Recovery of Severe Burns
X-rays
EctoCure
iFAST
Accelerators for healthcare?
Take part in a challenge to imagine new multidisciplinary solutions to address health issues using particle accelerators. All expanses covered with the chance to visit one of CERN's world renowned experiments.
From 22 July to 31 July 2025, at CERN
10-day innovation challenge open to all students
PHYSICS ENGINEERING
LIFE SCIENCES
CHEMISTRY MEDICINE
Apply now at: ifast-cbi.particle-accelerators.eu
HITRI
ACCELERATOR GROUP
European Physical Society
I.FAST has received funding from the European Union's Horizon 2020 Research and Innovation programme (GA No 101004730)


IN STENT CURE™
Don’t reopen the artery. Rethink it.


Fibrosis Disruption
Photon RT
1-2 Gy
40 Gy/s
SMITE Protocol
Low Dose, High Dose Rate, & Spatially Fractionated RT
+
SMITE-activated Nanoparticles
via inhalation
+
Anti-fibrotic Drug
Targeted delivery
SMITE-Activated
Nanoparticle
Core:
Delivery of the Anti-fibrotic payload Taladegib-PLGA Polymeric Solid NP
Inner Core:
Localised Disruption of the Fibrotic ECM
MnO2 Shell
Outer Core:
Ensuring Stability Until IR-Activation
PGLA-Thioketal Crosslink Shell
Surface:
Functionalisation
Anti-FAP Aptamer, Zwitterionic Coating, PEG Chain

X-Ray Magic
A new way to glue bones
1
Inject the material
2
Glow with X-Ray
3
Glue the bone
X-Ray


Targeted Auger electron therapy for antibiotic resistant bacteria
AuRA
Cyclotron
n
Sn
119 Sb III/V
p
Target
Radionuclide
119 Sb
Auger e⁻
Antibiotic-resistant bacteria
e.g. MRSA
IrradiAID+

Outcomes

- The I.FAST CBI has raised the profile of the accelerator community at many levels, including:
  - European Commission
  - Universities, laboratories + participating countries
  - Industry + medical sectors
- Created > 100 ‘ambassadors’ for our field:
  - Scientists, engineers, lawyers, medics, environmentalists, business, communications
  - Some teams still actively engaged
  - Possible start-up companies to advance ideas towards application
- The direct investment of ~ 100kEuro (+ sponsor support) will yield many dividends

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Academia-Industry Exchange Programme

An opportunity for early-career industry professionals to come to laboratories and vice-versa

www.ifast-project.eu/ifast-traineeship-programme

This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under GA No 101004730.

Task 2.4: Knowledge Exchange secondments

- 1. FREIA-Leijenaar Electronics, Netherlands: Trainee from Leijenaar participated in the development of high-power radiofrequency stations at Uppsala University.
- 2. CERN-THALES: Experts from CERN and Thales made visits to facilitate exchanges of simulation results for UHF klystrons and of simulation models and tools.
- 3. CERN-PercyRoc, Sweden: Trainee from PercyRoc visited several times CERN to build up expertise in technologies and developments useful for Industrial Microwave Heating, working on new Low Level RF systems.
- 4. SEEIIST-Cosylab, Switzerland: Researcher from SEEIIST spent two months with Cosylab, preparing a comprehensive product design specification documentation for an innovative gantry-less, compact, high-performance proton therapy facility.
- 5. RTU-Roesler Italiana, Italy: Researcher from RTU spent three months with Roesler, investigating post-processing techniques for additively manufactured pure copper Radio Frequency Quadrupole (RFQ) elements.
- 6. CERN/Teracare-OCEM Power Electronics, Italy: Researcher from Teracare spent one month with OCEM to optimise the design of a power converter in combination with a medical accelerator dipole magnet

Outcomes

- Although the start-up was slower than expected, in the end 6 successful secondments were made, which benefitted the respective collaborations with industry partners

- Valuable experience gained in understanding the Knowledge Exchange needs of industry partners → can guide future programmes

Outlook: future training + communications initiatives

- **INFRA-TECH-02: EPITA**

  WP2: Strategic communication, outreach + sustainability:

  Strategic communication, outreach + public value

  Challenge-based innovation: capacity building in accelerator technology

  Environmental sustainability: assessment across Research Infrastructures

- **INFRA-DEV-05: COORDINA-INNOV**

  WP1.1: Co-innovation training

  Assess training needs across Research Infrastructures, with industry collaboration

  Alignment of RI technology roadmaps, including training

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Questions?

This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under GA No 101004730.