



| The European Synchrotron



Light Sources: Knowledge hubs for Industry

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4th Generation High-Energy Synchrotron X-ray Source



FROM 2015 TO 2024
68,000 USER VISITS FROM 67 COUNTRIES
7,000 INDIVIDUAL LABS OR UNIVERSITIES



<p>10,000 Scientific visitors each year</p>	<p>4 + 2 Nobel prizes</p>	<p>2,000 Scientific pubs each year</p>	<p>10 ERC grants based on ESRF-EBS</p>	<p>30% of research with industrial partners</p>
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19 PARTNER COUNTRIES 40 BEAMLINES (mostly hard X-ray)

13 MEMBER STATES

France	27.5%
Germany	24.0%
Italy	13.2%
United Kingdom	10.5%
Russia	6.0%
Benesync (Belgium, The Netherlands)	5.8%
Nordsync (Denmark, Finland, Norway, Sweden)	5.0%
Spain	4.0%
Switzerland	4.0%

6 ASSOCIATE COUNTRIES

Austria	1.75%
Israel	1.75%
Poland	1.00%
Portugal	1.00%
Czech Republic	0.60%
South Africa	0.30%





INNOVATION DE RUPTURE - INDUSTRIE - SCIENCE RECHERCHE - EDUCATION - STARTUPS - PRIX NOBEL - DEEPTech - INVENTIONS - CERVEAUX - CRÉATIVITÉ - ENTREPRENEURS INTERNATIONAUX - TALENTS - RECHERCHE FONDAMENTALE - R&D - TECHNOLOGIE INVESTISSEMENT BREVETS

Grenoble Alpes

6 RAISONS D'INNOVER À GRENOBLE ALPES

1. CERVEAUX: LA PLUS FORTE CONCENTRATION DE CHERCHEURS EN FRANCE

Grenoble Alpes Métropole, Capitale européenne de l'Innovation 2028

Chaque année plus de **12 000** scientifiques internationaux viennent expérimenter dans 5 grands instruments européens

1^{er} en France pour l'emploi en R&D (en % de l'emploi total)

Emplois dans la recherche
 Privée : **15 000**
 Publique : **15 000**
 dans un rayon de **20KM**

ESRF	ILL	IRAM	EMBL	EMFL
Synchrotron	Neutron	Radio astronomy	Biologie moléculaire	Champs magnétiques

2. INVENTIVITÉ: L'INNOVATION DE RUPTURE EST DANS NOTRE ADN

Grenoble, **7^{ème}** ville européenne pour le financement des startups deeptech (Global Tech Ecosystem Index 2023)

7,3 BREVETS pour 10 000 habitants

Grenoble, **7^{ème}** ville mondiale en densité deeptech entre 2018 et 2024 (European Deeptech Report 2023)

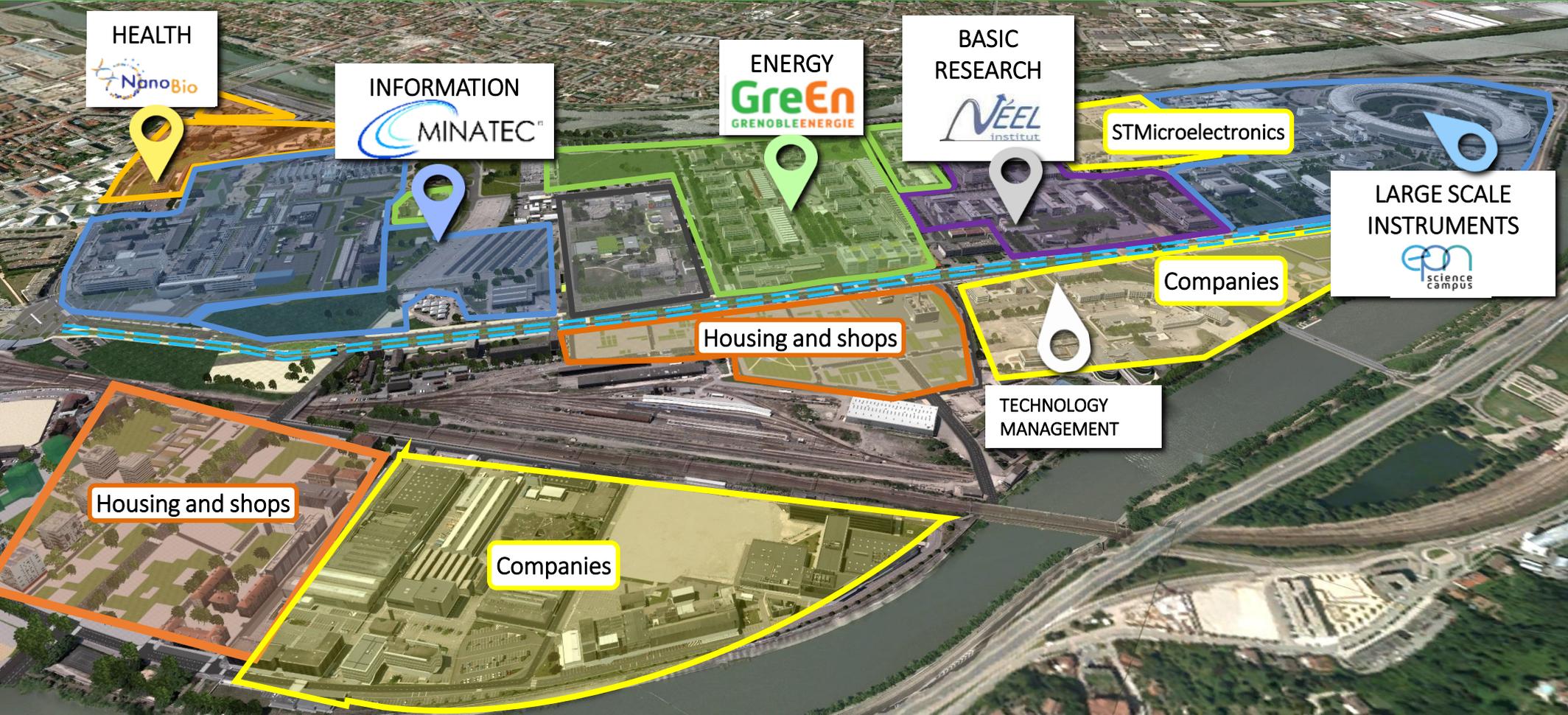
Un territoire pionnier dans les **TECHNOLOGIES QUANTIQUES**



➤ **3 European research institutes, members of EIROforum, and the Institute for Structural Biology, at the heart of GIANT, the campus of Innovation (Grenoble Innovation for Advanced New Technologies)**

➤ **Common research and training platforms**

GIANT is six thematic districts: science to tech valorisation to enterprises



HEALTH
NanoBio

INFORMATION
MINATEC

ENERGY
GreEn
GRENOBLE ENERGIE

BASIC RESEARCH
NEEL
institut

STMicroelectronics

LARGE SCALE INSTRUMENTS
epn
science campus

Companies

Housing and shops

TECHNOLOGY MANAGEMENT

Housing and shops

Companies

NEWS ARTICLE | 4 December 2025 | European Innovation Council and SMEs Executive Agency | 3 min read

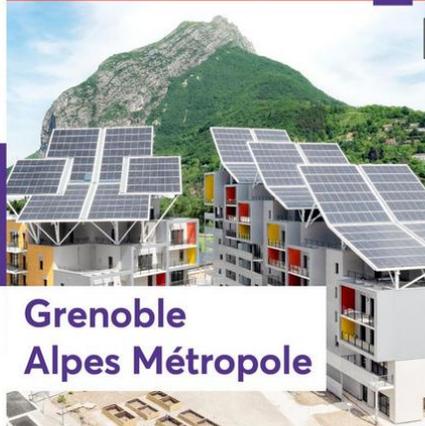
Grenoble Alpes Métropole and Aalborg are winners of the European Capital of Innovation Awards 2026



THE EUROPEAN CAPITAL OF INNOVATION 2026

THE WINNERS

European Innovation Council



Grenoble Alpes Métropole



Aalborg

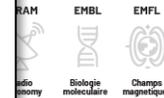
#iCapitalAwards

➤ Common research and training platforms



CHEURS EN FRANCE

000 scientifiques internationaux
5 grands instruments européens



OTRE ADN

Grenoble 7^{ème} ville mondiale en densité deeptech entre 2018 and 2024 (European Deeptech Report 2024)

and the campus of (ologies)

ESRF MISSIONS

- Bring nations together through science and advance knowledge
- Pioneer synchrotron technology to tackle global challenges
- Develop and operate state-of-the-art X-ray facilities and provide value to all partner countries
- Foster the use of X-rays for industry
- Train the next generations



*Version including amendments
resulting from the accession of the Netherlands
to the ESRF Convention*

Recognizing that synchrotron radiation will in future be of great significance in many different fields and for industrial applications;

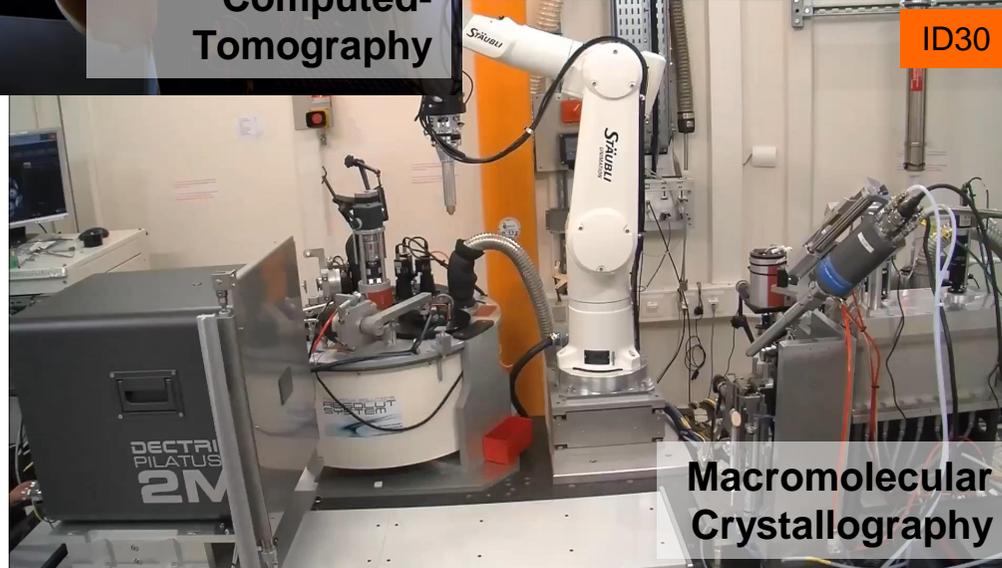
In the hope that other European countries shall participate in the activities which they intend to undertake together under this Convention;

Building on the successful co-operation of European scientists in the framework of the European Science Foundation and the preparatory work carried out under its



Might
Could
Should
Must
Like

40 X-ray beamlines: All different and all tailored



- **IMPACT - POLITICS:** Demonstrate use of facilities, skills and intellectual property
- **GOOD SCIENCE:** Challenging, real samples
- **EFFICIENCY DRIVERS:** New access modes, standards, efficiency
- **CAREERS:** Wider opportunities for staff
- **CASH:** More resources

X-rays have been used for **Innovation** since their **discovery** in 1895 by Röntgen.

108 THE SATURDAY EVENING POST May 26, 1928

"This X-ray showed me how to reduce my score from 102 to 91"



HERE'S the original negative of a "U. S." Royal," said the doctor, "made in my own office."

"I made up my mind to diagnose my own putting trouble and to see for myself whether I wasn't missing a good many putts by using balls that were lopsided—off-center inside."

"I tested many different makes of balls and found the answer—only the 'U. S.' Royal showed a perfect center accurately

show why the "U. S." Royal is the truest putting golf ball in the world. —why, under normal conditions, it never wobbles or rolls off, and why its flight is equally dependable.

Look at these untouched photographs out of round. Its tough resilient cover and exclusive inside construction are designed to stand every condition of actual play.

Your professional or authorized dealer has them. In either mesh or recess marking—and the price is 75c.

"How a Golf Ball is Made"
Let us send you a free copy of an absorbing, human interest story of the building of a golf ball, by Robert H. ("Bob") Davis, internationally known author and editor. Address any one of our many branches or The Golf Ball Department, 1790 Broadway, New York.

United States Rubber Company

United States Rubber Company

GOLF BALLS

BALL A—
a "Wobble Ball,"
missed 24 out of 100 putts

BALL B—
Lopsided inside,
missed 40 out of 100 putts

BALL C—
High-shaped Greenie,
missed 22 out of 100 putts

"U.S." Royal—99 perfect
putts out of 100 shots

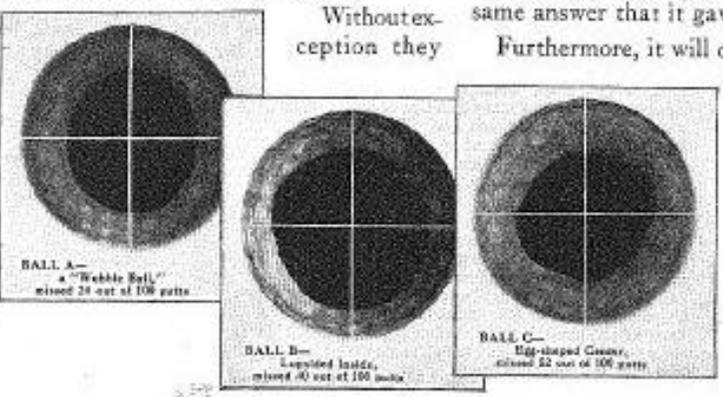


Without exception they

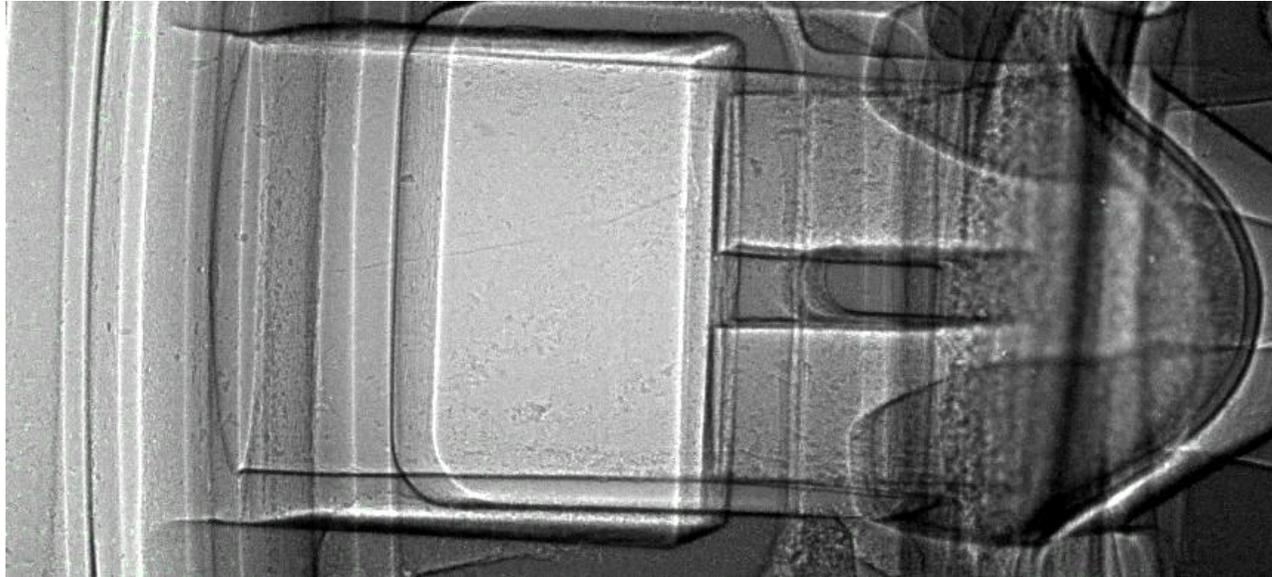
The "U. S." Royal will give you the same answer that it gave the doctor.

Furthermore, it will drive as far as any other golf ball made—and last as long.

Wallop a "U. S." Royal as hard and as much as you please. You can't knock it



ULTRA-HIGH SPEED SYNCHROTRON RADIOGRAPHY – BLINE ID19

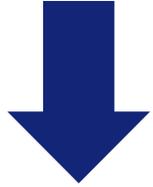


Watching an inhaler in real time to improve its drug-delivery efficiency.



 **PRIOR**
PLM MEDICAL

**Going far beyond conventional facilities
for advanced characterisation**



**1. Routine
measurements**



**2. Complex
experiments**

WHY USE SYNCHROTRON X-RAYS?

Higher Penetration
(2D->3D)



Higher Spatial Resolution
(focused spot size down to 20nm-> mapping and multimodal imaging)



Faster
(statistical measurements, time resolved)



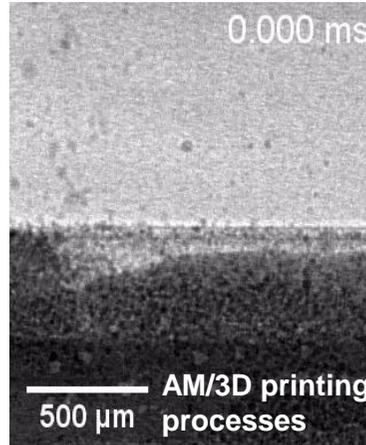
Improved Detection Limit
(finest chemical information)



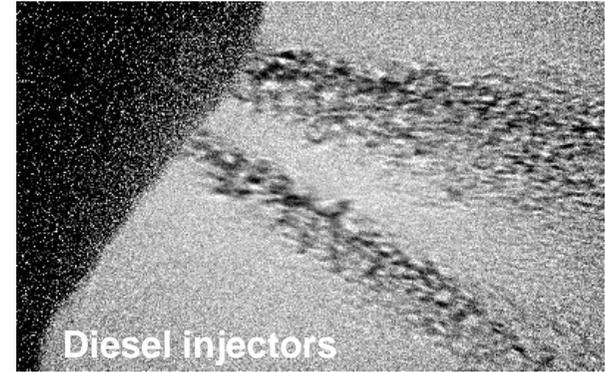
WHY USE SYNCHROTRON X-RAYS?

Higher Spatial

Real samples, real conditions



Lee et al, UCL.



Hutchins, Prism Scientific

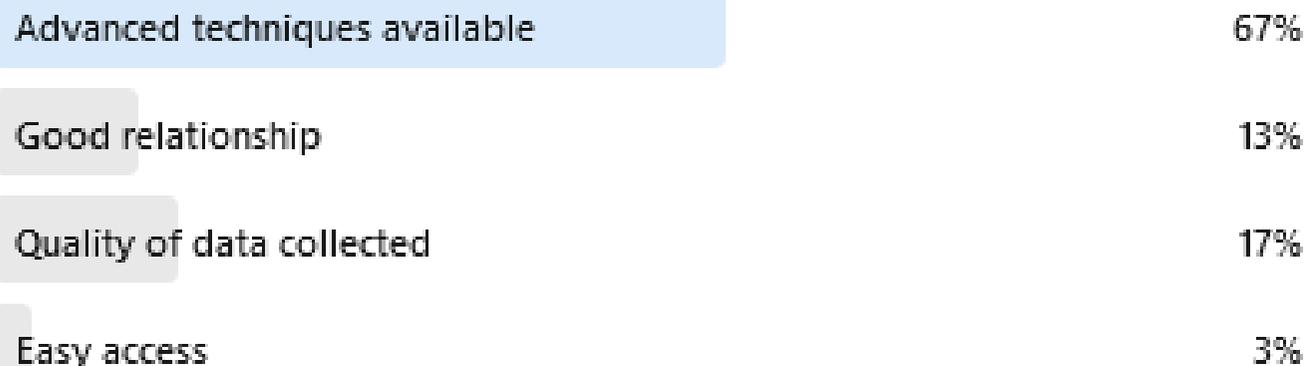
Put a 3D printer on the beamline, a battery abuse system, a catalyst bed, a protein crystal harvesting system...

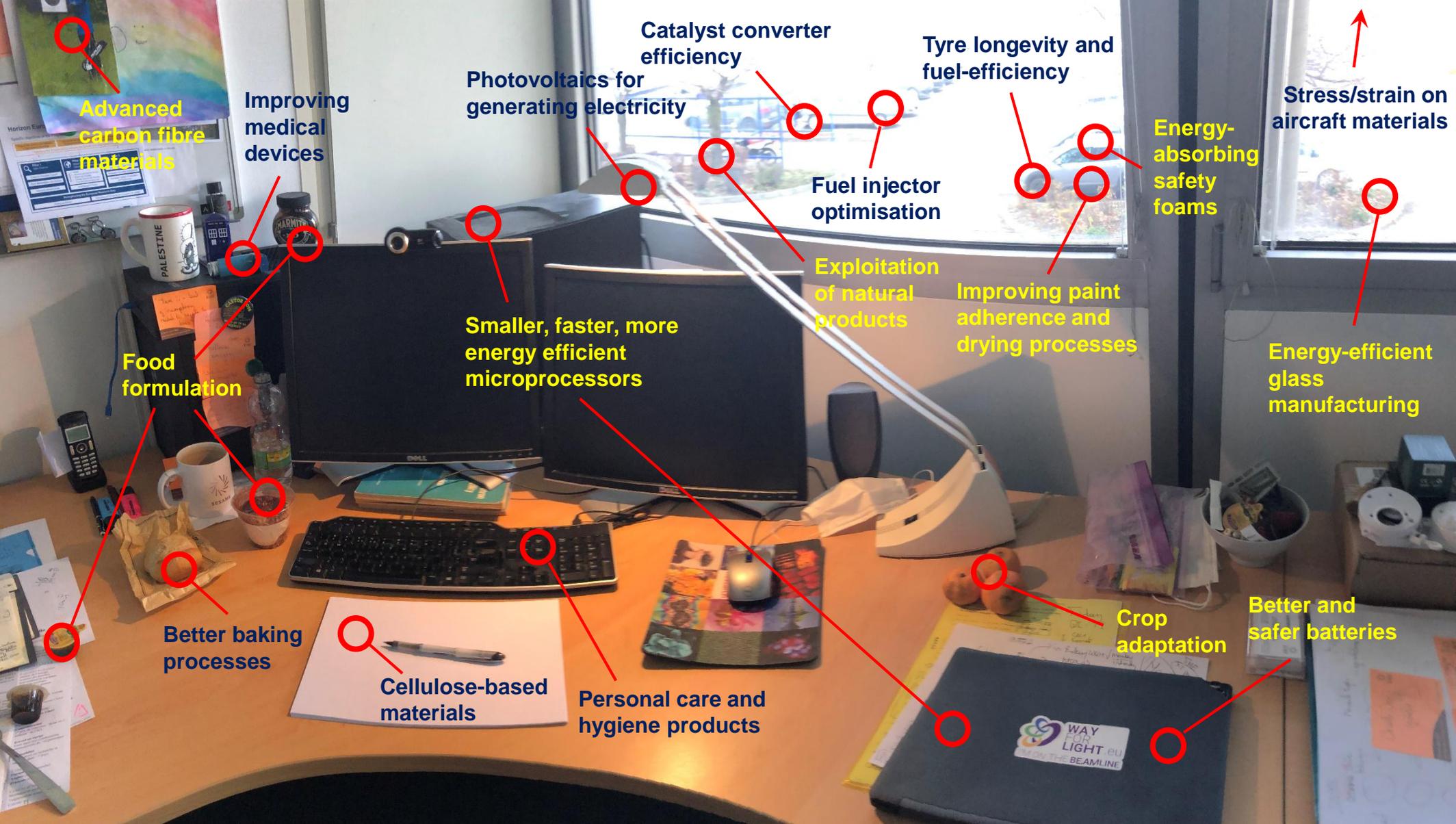
Imagination is the only limitation.

Credit: Keith McDuffee

Which is the biggest advantage of collaborating with ESRF?

You can see how people vote. [Learn more](#)





Advanced carbon fibre materials

Improving medical devices

Food formulation

Better baking processes

Cellulose-based materials

Personal care and hygiene products

Smaller, faster, more energy efficient microprocessors

Photovoltaics for generating electricity

Catalyst converter efficiency

Fuel injector optimisation

Exploitation of natural products

Tyre longevity and fuel-efficiency

Improving paint adherence and drying processes

Energy-absorbing safety foams

Stress/strain on aircraft materials

Energy-efficient glass manufacturing

Crop adaptation

Better and safer batteries

WAY FOR LIGHT.eu
ON THE BEAMLINE

HOW DO LIGHT SOURCES ENGAGE WITH INDUSTRY?



How does ESRF engage with industry?



PROPRIETARY SERVICES

75% income

Rapid & confidential

Mail-in services

>300 clients

35 countries



TECH TRANSFER

25% income

Licensed > 30 technologies

In-house manufacturing

Consultancy

Technology procurement



PUBLIC ACCESS

Competitive call for proposals

Requirement to publish data
and results

6-9 months delay



COLLABORATIONS & GRANTS

Industry proposed staff

Horizon Europe and national
(e.g. IRT, BMBF, UKRI, CZI)



RITIFI
Research Infrastructure
Technology Infrastructure
For Impact

**PROCUREMENT
& SERVICES**

How does ESRF engage with industry?



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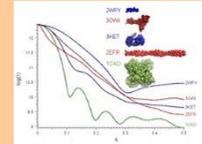
Licensed > 30 technologies

In-house manufacturing

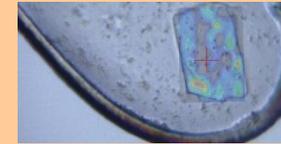
Consultancy

Technology procurement

1. Fixed price “per sample” mail-in services



SAXS @ 150€



MX @ 120€

2. Tailored full service work for more complex research needs

3. Simple quote with clear terms and conditions and rapid NDA turnaround

4. Dedicated commercial admin team

5. Dedicated support scientists in key areas and rapid access

(MX, tomography, SAXS)

How does ESRF engage with industry?



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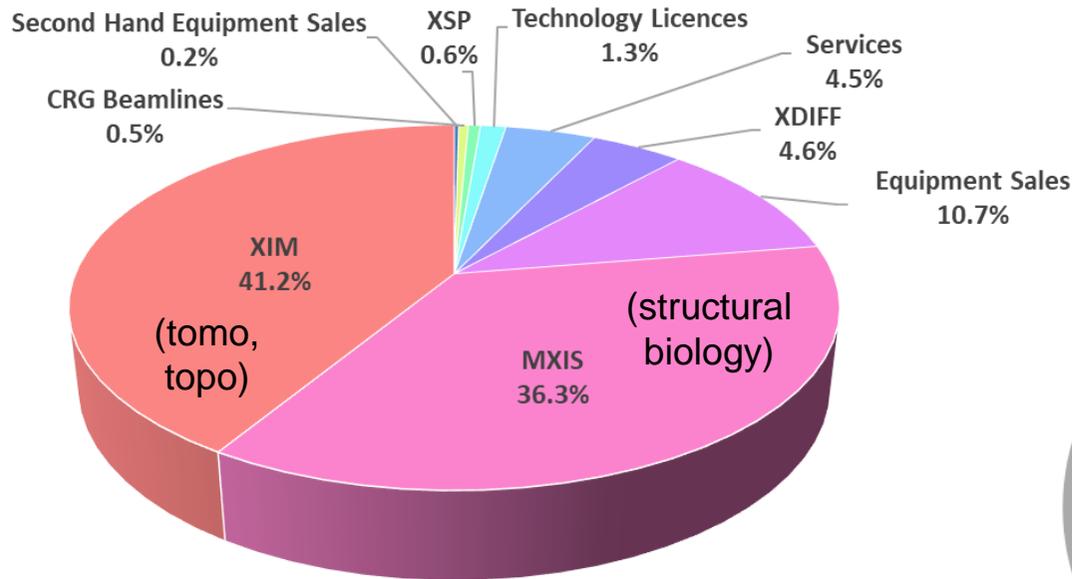


RITIFI
Research Infrastructure
Technology Infrastructure
For Impact

2025: 4.0MEuros

2025: 0.5MEuros

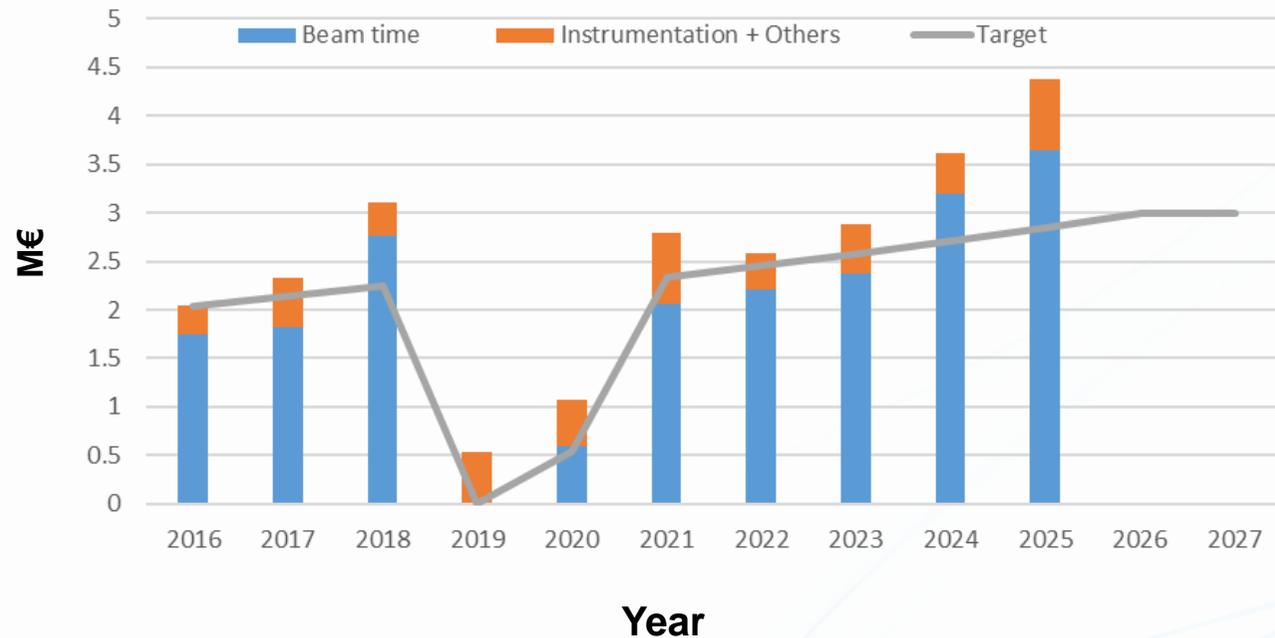
ESRF impact – facts and figures – industry use and procurement



2025 commercial income



Commercial income at ESRF: our only formalised “value” measure



(figures exclude income due to PSI-SLS closure coverage)



Annual target initiated in 2016 at
2.0M€

5% year-on-year growth
demanded

Commercial income only,
excluding grants and
collaborations

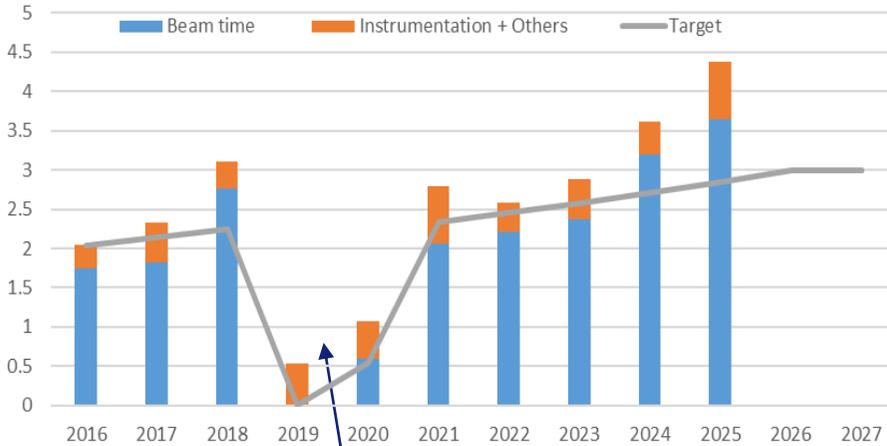
TENSION BETWEEN FACILITY PERFORMANCE METRICS?

Commercial
income

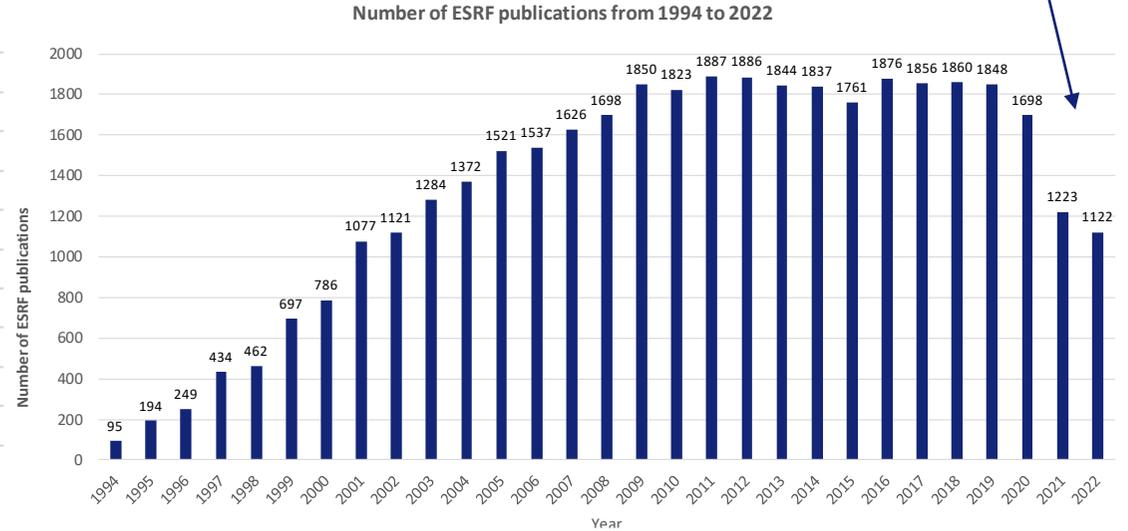
VS

Publication
numbers

Upgrade
closure
impact



Upgrade
closure
impact



Upgrade
closure
impact

Industry Using our Facilities



PERCEPTIONS ARE (VERY) HARD TO CHANGE

Our view of the ESRF:

- Unique large-scale instrument
- State-of-the-art
- Fantastic science

Look what we can do!



Industrial translation:

- Expensive and difficult to use
- Risky
- Fundamental science

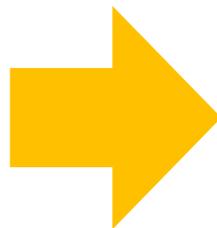
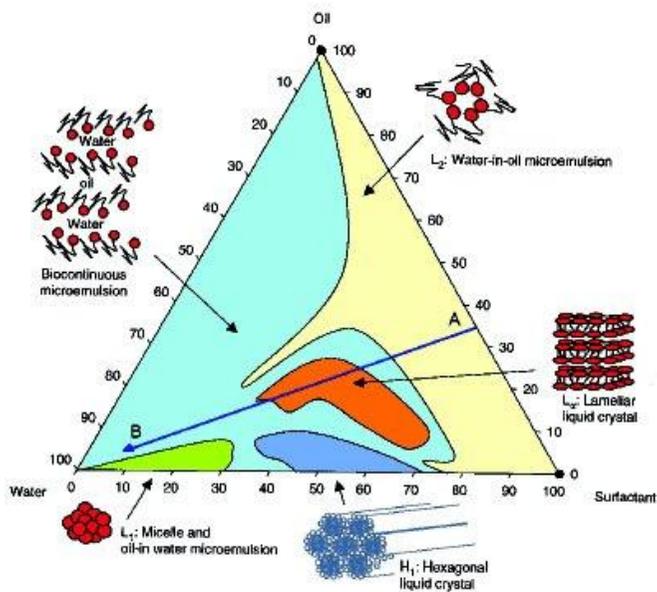
Not for me.



PRODUCT INNOVATION



PRODUCT INNOVATION



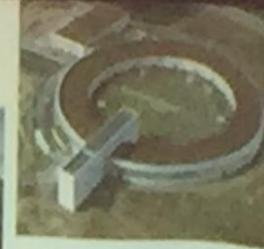
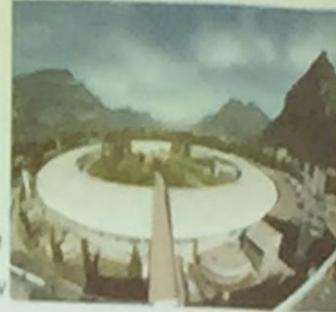
WHAT DOES INDUSTRY WANT?

Maximising impact

- Routine measurements 'fee for service'
- R&D collaborations to jointly answer challenging research questions
- Dialogue – outreach activities as well as discussions with advanced users on e.g. interfaces/instrumentation
- Competence – resources and ability to co-develop new technologies and experiments as well as to train, counsel and support industrial users
- Funding – 'feasibility studies' for new users

Practical considerations:

- Easy and timely access cross infrastructures
- Effective handling and technical/software solutions for samples, data collection, analysis and management
- Agile and cost efficient setting



Anna Sandström
AstraZeneca

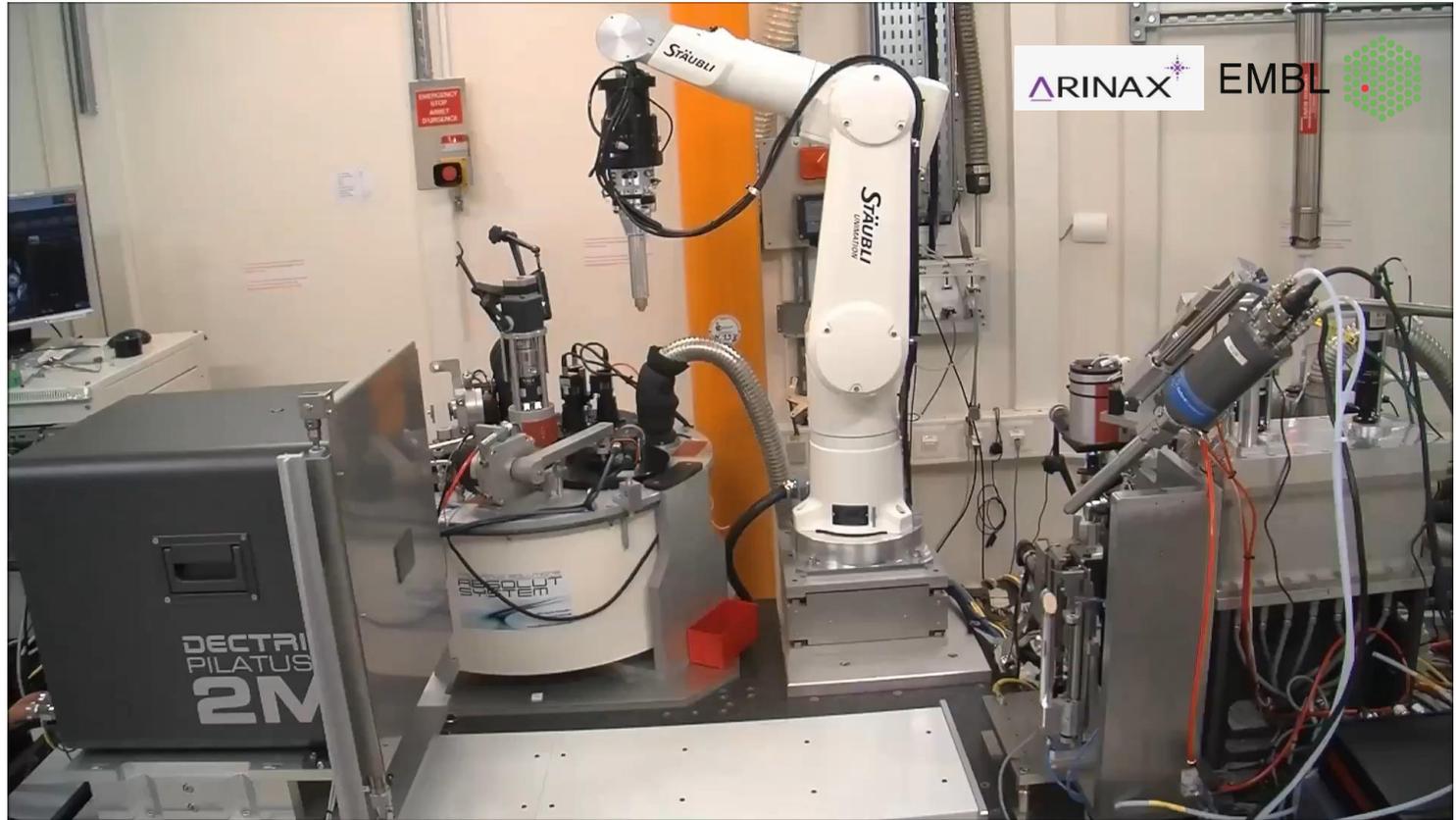
“Synchrotron as a Service”

Provide what industry actually needs.

In this case:

Automated
Reliable
Rapid
Cost Effective
High Quality
Trusted

An integral part of drug discovery pipelines.



ESRF processes 10,000s of protein structure samples every year for the pharma industry.

“All drug targets for 34 oncology new molecular entities approved 2019-2023 were characterised using protein structures”



Argonne 
NATIONAL LABORATORY

Advanced
Photon
Source

IMPACT

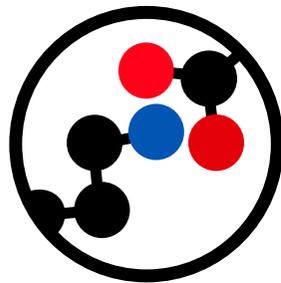


IMCA-CAT

Industrial Macromolecular Crystallography Association
Collaborative Access Team



Advanced
Photon
Source



IMCA-CAT

Industrial Macromolecular Crystallography Association
Collaborative Access Team

INDUSTRY

IMCA Members

abbvie

Bristol Myers Squibb™

Janssen
PHARMACEUTICAL COMPANIES OF
Johnson & Johnson

MERCK

NOVARTIS

Pfizer

IMCA-CAT Subscribers

EXPERIMENT

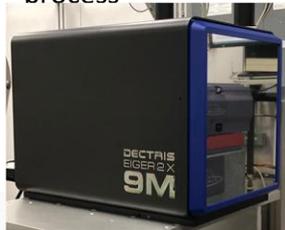
Beamline 17-ID @ APS



- focused, intense beam
- mini beam 5-50 μm
- pucks: Unipuck, ACTOR, ALS

CAPABILITIES

- diffraction rastering
- collect-along-vector
- auto collect & process

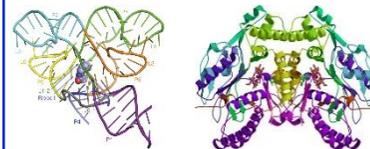


- proprietary
- rapid & frequent access
- mail-in, remote, on-site

www.imca-cat.org

PRODUCTIVITY

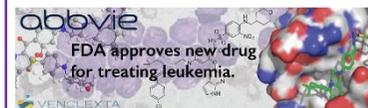
23,000+
structures annually



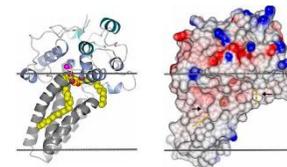
- high-throughput
- fast, encrypted data transfer
- real-time integration to company pipelines



DISCOVERY



- micro crystals
- membrane proteins
- MAD / SAD
- *in situ*



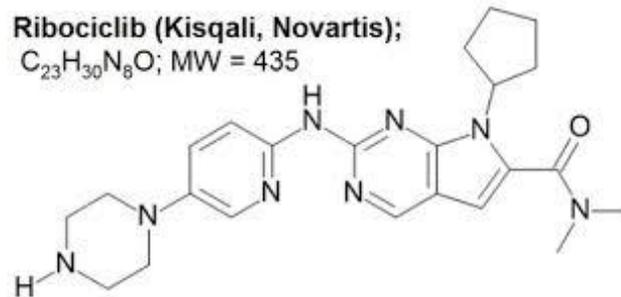
Drugs

Kisqali[®] (Novartis)
metastatic breast cancer

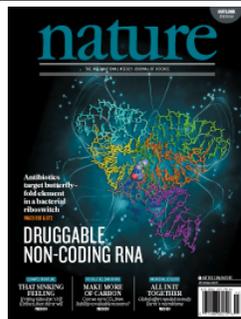
- FDA:
- Breakthrough Therapy
 - Priority Review



Ribociclib (Kisqali, Novartis);
 $C_{23}H_{30}N_8O$; MW = 435



Ribocil (Merck)
antibiotic

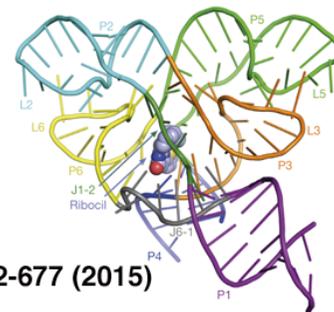


Science Highlight:
Discovering Antibiotics

Selective small-molecule inhibition
of an RNA structural element
by Howe, Wang, Fischmann, et al.



Nature 526, 672-677 (2015)



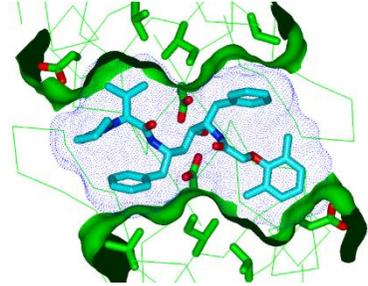
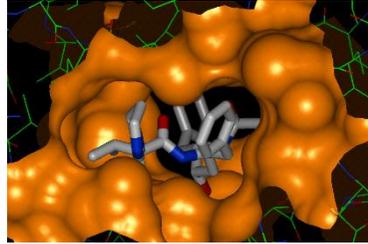
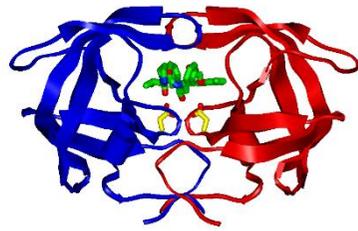
Venclexta[™] (AbbVie)
chronic lymphocytic leukemia

- FDA:
- Breakthrough Therapy
 - Priority Review

abbvie
FDA approves new drug
for treating leukemia.
VENCLEXTA

Drugs

Kaletra[®] (Abbott)
AIDS



KALETRA[®]
(lopinavir/ritonavir)

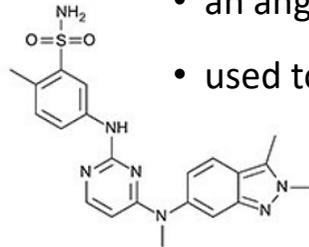
Januvia[®] (Merck)
type 2 diabetes



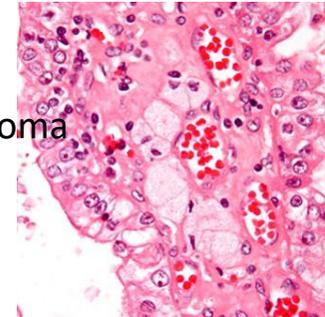
- approved by the FDA in 2006
- one of the most popular type 2 diabetes drugs on the market

Januvia[®]
(sitagliptin, MSD)

Votrient[®] (GSK)
kidney cancer



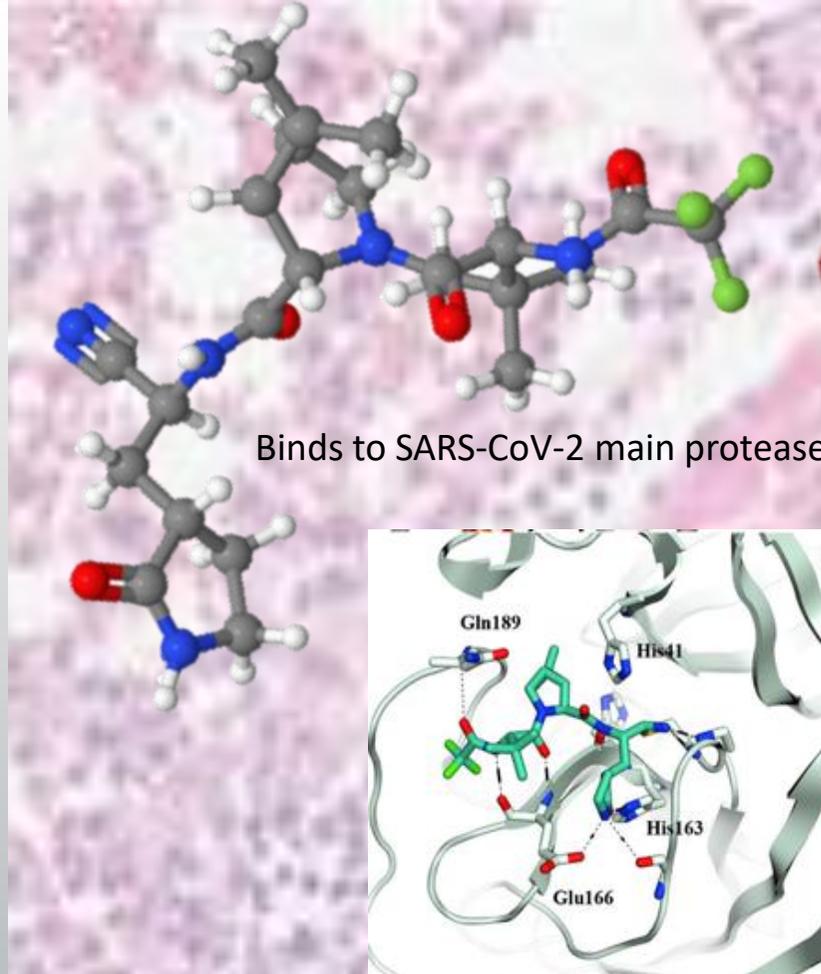
- an angiogenesis inhibitor
- used to treat advanced renal cell carcinoma



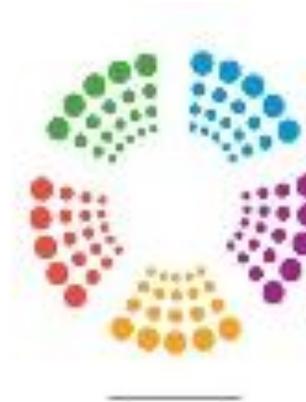
Votrient[®]
pazopanib

Drugs

Paxlovid™



SCIENCE • 2 Nov 2021
[DOI: 10.1126/science.abl4784](https://doi.org/10.1126/science.abl4784)



STREAMLINE

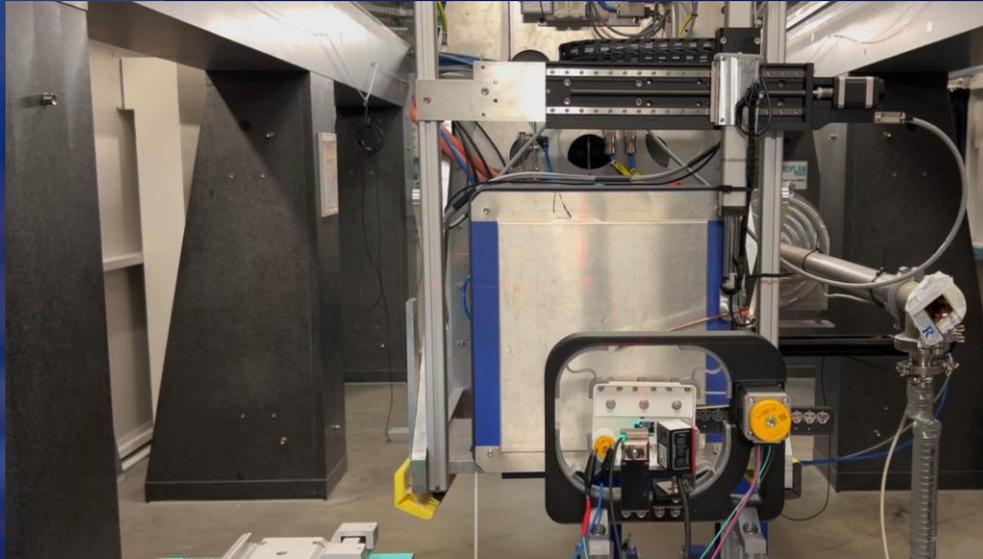
Win-win format

Magnus@MAXIV - “Not static, fitting needs”

Big data to drive industry: high-speed X-ray powder diffraction

 **BASF**

We create chemistry



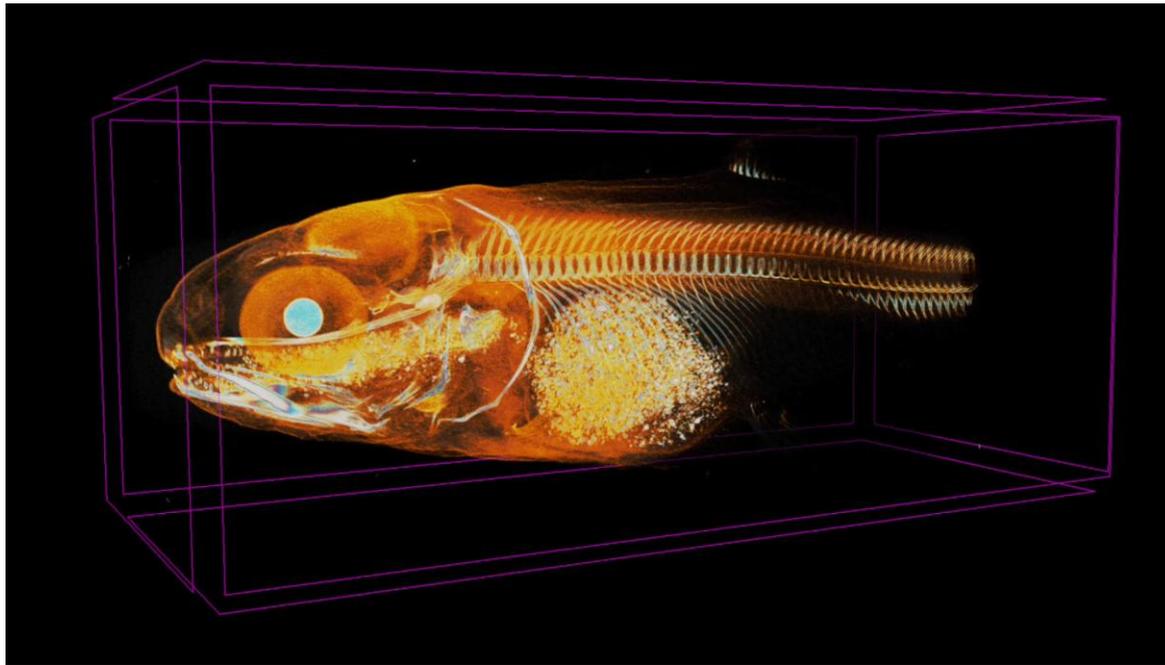
- Catalysts
- Battery Materials
- Agrochemicals
- Pharmaceuticals
- Process Additives

 Bundesministerium
für Bildung
und Forschung

Startup creation which has raised >1M€, employs 10 people, collecting data on thousands of samples for industry clients.



X-RAY COMPUTED TOMOGRAPHY- BLINE BM05



Biomar interested in how experimental diets affect fish digestion process, which is why they saw a great potential in non-destructive 3D imaging as a complement to dissection and histological analysis.

X-R



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NEWSROOM

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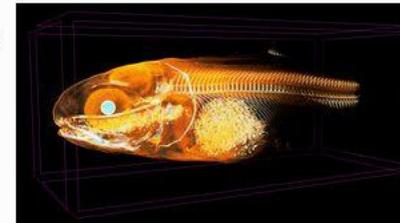
News

Non-destructive 3D imaging expands aquafeed research tools

Thursday, April 21, 2022

The [Danish Technological Institute](#) (DTI), in collaboration with BioMar, investigated batches of fish larvae after being fed different experimental diets. BioMar was interested in how the experimental diets affect the digestion process of fish, and the company found great potential in non-destructive 3D imaging as a complement to dissection and histological analysis.

“Our collaboration with DTI has tremendously aided in expanding our research tools to increase our knowledge of fish physiology. The overarching gain to include this top-of-the-art technology is to continue improving what we offer to the aquaculture industry in form of a feed. In other words, each pellet we produced is based on solid science, and this exciting collaboration provided us with the right tools,” said Pedro Gómez, senior scientist, Biomar Denmark.



Pisciculture

RTO
expertise



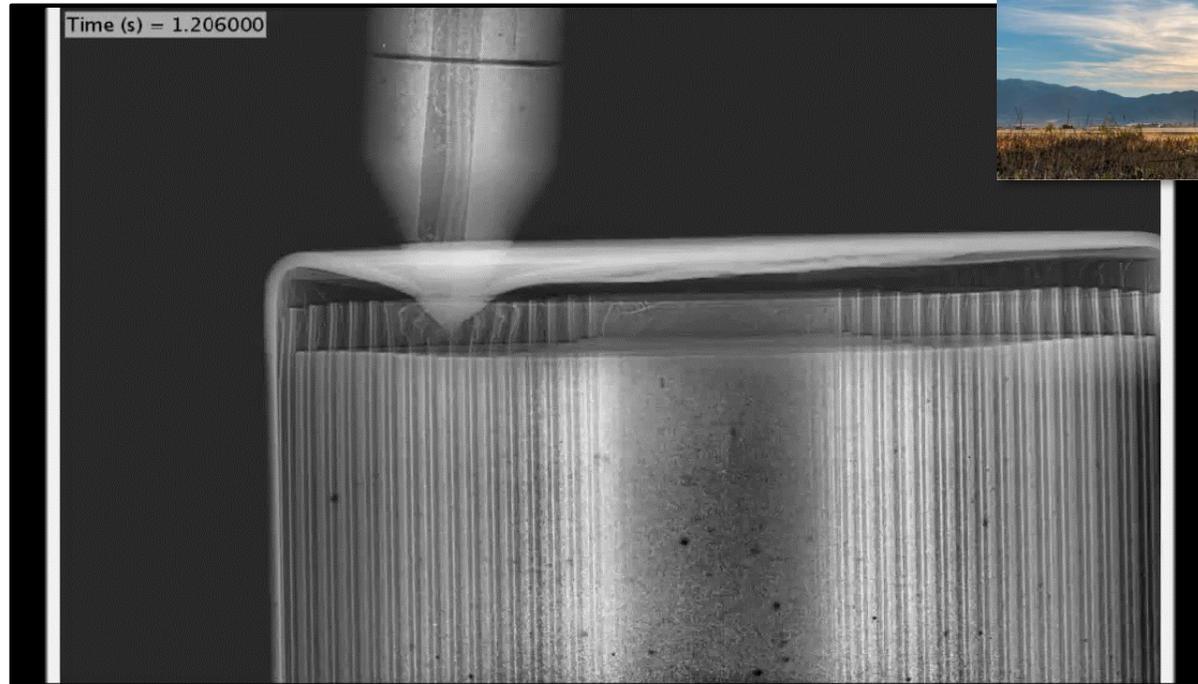
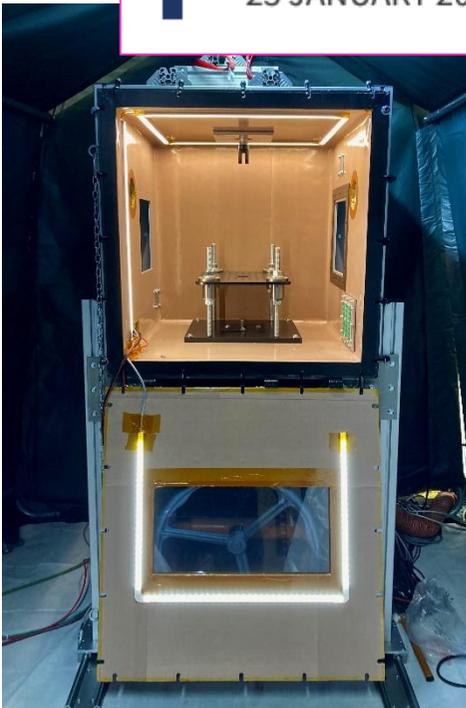
and in how
diets affect fish
growth, which is why
3D imaging has
great potential in
non-destructive
3D imaging as
an alternative to
dissection
analysis.

<https://www.dti.dk/synchrotron-imaging-of-low-density-materials/visualization-of-soft-tissue-in-small-fish-phase-contrast-ct/43911,3>

<https://www.aero-mag.com/archer-aviation-signs-deal-with-nasa-on-battery-development>

Archer Aviation signs deal with NASA on battery development

23 JANUARY 2024 • IN NEWS

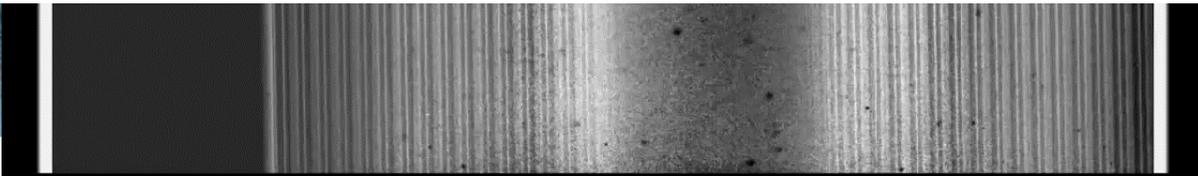
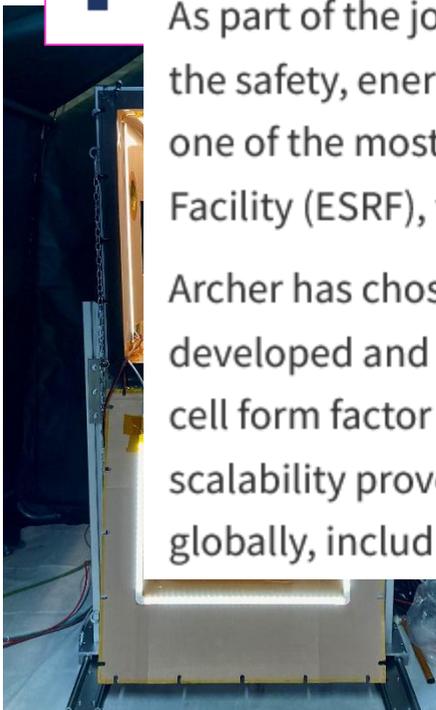


Archer Aviation signs deal with NASA

“We’re extremely proud to partner with NASA, who has pioneered the eVTOL industry over the last three plus decades, in support of our collective mission to ensure U.S. leadership in aerospace continues for decades to come,” said Adam Goldstein, Archer’s Founder and CEO.

As part of the joint efforts around battery characterisation, NASA and Archer will focus on further testing the safety, energy and power performance capabilities of the battery cells. Tests will be performed using one of the most advanced high speed X-ray facilities in the world, the European Synchrotron Radiation Facility (ESRF), to understand how the cells function during extreme abuse cases.

Archer has chosen these cells to power the proprietary electric powertrain system Archer has designed, developed and is beginning to mass manufacture for its production electric air taxi, Midnight. The battery cell form factor chosen by Archer, a cylindrical cell, has a track record of safety, performance and scalability proven through decades of volume manufacturing, deployed across many applications globally, including in millions of electric vehicles.



SOME THINGS CANNOT BE CHANGED....

But we can try to make them easier and lower barriers:

- Safety and regulatory steps
- Administrative access steps
- Sending samples - tracking
- Legal: simple quotes and clear T&C
- Acceptance of company NDA, MSA, MTA models



Formalised quality assurance frameworks?

Which are the perceived barriers that can impact the use of the ESRF services?

You can see how people vote. [Learn more](#)

Cost and/or scheduling time	38%
Amount of paperwork	14%
Intellectual property	14%
None of the above/others	33%

ACTIVITIES

Experimentalists (when

Client related to the

experiment, unless

performed as part of the

Client. The Client is

responsible for the

experiment, but if the

Client is required by the

ESRF to perform the

experiment, the

Client shall be held

responsible for the

experiment, unless

performed as part of the

Client. The Client is

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experiment, but if the

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responsible for the

experiment, but if the

Client is required by the

- two weeks' notice in writing
- one week's notice in writing

4. Scientific and Technical Assistance

- 4.1 **Technical support:** A Local Country beamline, within the limits of a user to the operation of the beamline environment. His/her role is to assist the Client in the operation of the beamline. The Client must provide the assistance as per § 4.2 below in the event of a technical problem occurring on the beamline.
- 4.2 **Scientific assistance:** In addition to the technical assistance, the Client may request, subject to availability, at the discretion of the ESRF, scientific assistance from the ESRF staff.
- 4.3 Normally, no assistance is available after 22h00. However, may be called on extension 252 technical problem occurring on the beamline.

5. Liability

- 5.1 Responsibility for any material property of the Client rests with the Client. The Client must ensure that any material property is transported to and from the ESRF in a timely manner and that the ESRF is notified of any loss or damage to the material property.
- 5.2 While the ESRF will take all reasonable care to ensure that the material property is safe, the ESRF will not indemnify the Client in the case of theft or loss of the material property.
- 5.3 The Client will be solely responsible for the substance(s) analysed and the results of the analysis.
- 5.4 At all times, ESRF retains complete control over and responsibility for its personnel, who shall not, in any sense, be considered to be employed by the Client. ESRF shall meet all costs related to the employment of its personnel (salaries, insurance payments, medical attention, etc.). The same holds true for the Client's personnel.



THE USE OF THE FACILITY, OR ANY INTELLECTUAL PROPERTY, GENERATED INFORMATION OR PRODUCT MADE OR DEVELOPED, OR THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE RESEARCH OR ANY RESULTING PRODUCT.



TamaTA-Innov: Boosting SME innovation with advanced X-ray analysis

European H2020 project “LEAPS Innov” enabling subsidised & confidential access for SMEs.

Easy and fast applications - Κρατώντας το απλό!

To apply: www.wayforlight.eu/en/industries

Clients using the TamaTA SME support:

- ✓ “We obtained very useful results for **improving the formulation and manufacturing process** of a very innovative product that we are currently introducing in the market.”
- ✓ “We are extremely satisfied with the results and they have given us **new insights into our materials discovery** pipeline.”



SUPPORTING INNOVATIVE SME COMPANIES



Takis Biotech (It)

- COVID therapy
- ID23-2/micro-MX



SCANDIFLASH™

Scandiflash (Se)

- Instrumentation
- ID19/MHz radiography



Hey Planet (Dk)

- Food ingredients
- BM05/micro-CT



Recyclable Materials Development at Analytical Research Infrastructures

International cooperation network for Circular Materials Research and Innovation



 **4**
year project

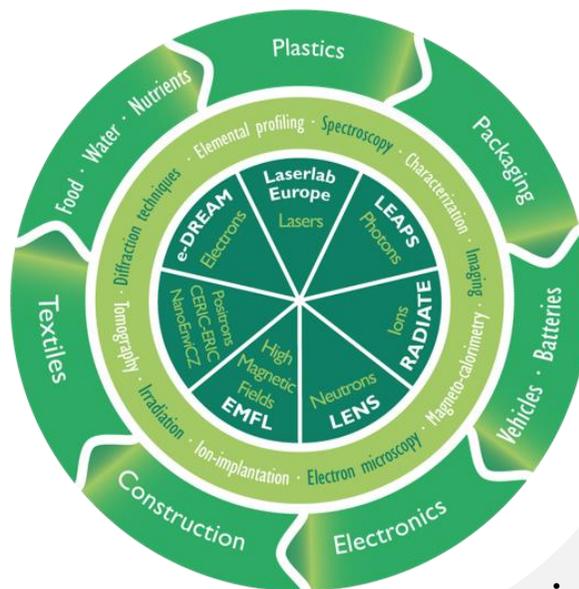
 **15** MEUR

 **50+**
Research Infrastructures
in 18 European countries

 **20+**
Analytical techniques
synchrotron, laser, ion, electron,
magnetic field, positron, neutron

Collective access to key research infrastructures for researchers addressing the circular economy

- Professional expert support
- Personalised training for new users
- Tailored access for industry



Impact and Reach

- 400+** academic projects
- 33** SME projects
- 12** Industry pilot projects
- 10** training workshops and **>30** webinars

Most-used multi-technique combinations

- Synchrotron + Electron Microscopy
- Synchrotron + Ion Beam Analysis
- Electron Microscopy + Ion Beam Analysis

Top CEAP sectors with highest demand

- Batteries and Energy Storage
- Electronics & IC
- Plastics & Packaging
- Construction & Building Materials

Multiscale 3D imaging of additive manufactured heat exchangers

ReMade@ARI

Supporting industry with state-of-the-art techniques



SIEMENS
ENERGY

X
XPLORAYTION GmbH

ESRF
The European Synchrotron

Siemens Energy wanted to see inside their additive manufactured objects:

- Unique design for higher efficiency
- Lower materials waste
- Recycling of powders

Xploraytion as CT experts imaged a 3D printed heat exchanger at ESRF:

- Study the internal surfaces
- Quality control of manufacturing process
- Identification of manufacturing defects

Image credit: Christoph Heinze, Siemens Energy Global GmbH & Co KG and Jussi-Petteri Suuronen, Xploraytion GmbH.

ESRF is now partnering with the European Innovation Council!



Free consulting services



5 Tailored Services for EIC
Beneficiaries



Visit the **EIC** service catalogue and
find us in the **pathfinder** section!





Initial Expert Consultancy

- Respond to industrial R&D needs/questions using cutting-edge X-ray characterisation techniques
- Remote one-on-one or group meetings
- Free of charge

Fast Track Access to X-ray Services

- Quick access to advanced X-ray techniques for routine materials and products characterisation
- Measure sample structures at different scales, from atomic to macro, whilst being non-destructive

Tailor-made Support and Experimentation

- Build a tailored support and exploitation of synchrotron X-ray techniques for a longer-term R&D support
- Specific experiment environments, set-ups

MAX IV



Photo ABML4

MAXIM

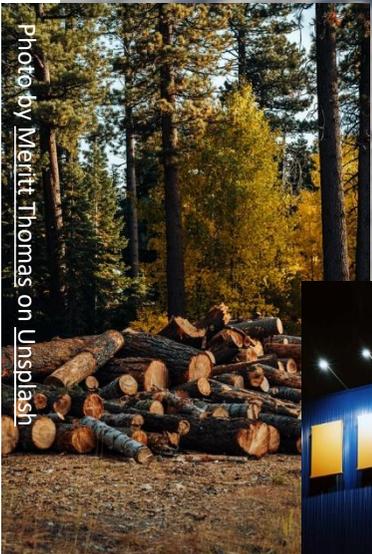


Photo by Meritt Thomas on Unsplash



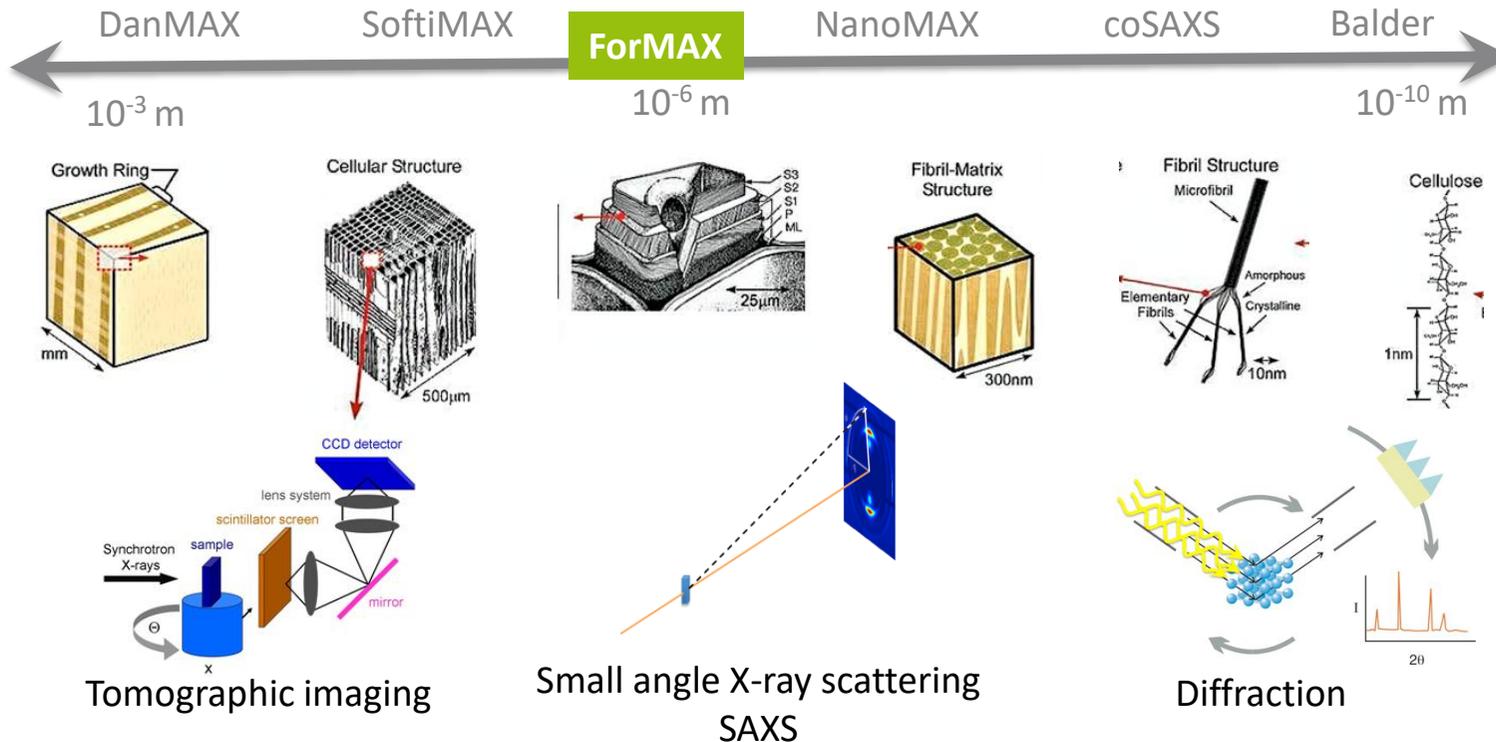
Photo by Rendy Novantino on Unsplash



Photo ABML4

Wood – from Logs to Lignin Molecules

Wood is a hierarchical multi-scale raw material





TRESEARCH

“Collaboration on the research on new materials from the forest”

OPEN: November 2022



ForMAX:

- Supports R&D on biocomposites, nanocellulose, modification of wood, the pulping process, fibre ultrastructure and fibre-fibre bonding
- Provides advanced material characterisation, including complex real-time processes
- Contribute to the Swedish forest industry competitiveness (paper/pulp industries – Tetra Pak).

Joint funding from Wallenberg Foundation and industry



“ForMAX”

SAXS/WAXS/tomo beamline

<https://treearch.se/en/research-infrastructure/formax/>



Outreach.
Translation.
Matching.
Common understanding.

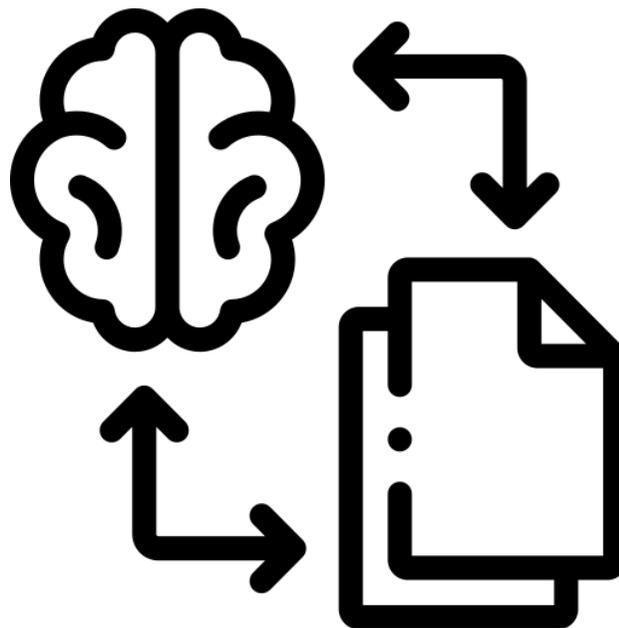


ESRF at the heart of the innovation ecosystem

- 300 clients over last 5 years
- 800 commercial services in 2025
- 4.5M€ commercial income 2025



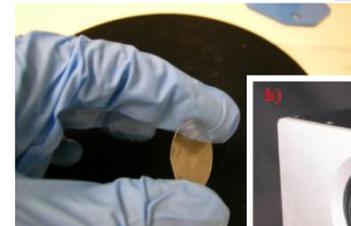
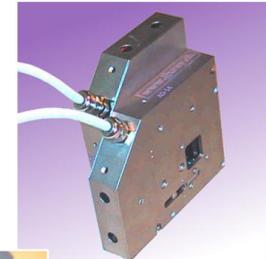
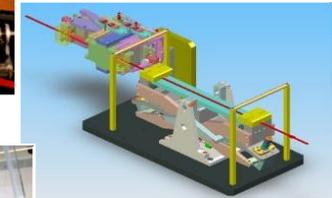
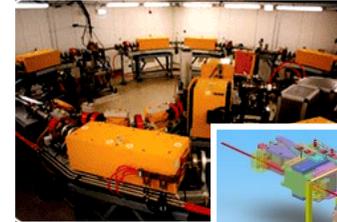
Technology and Knowledge Transfer



EXPLOITING SYNCHROTRON IP AND SKILLS

- Sharing and licensing technologies and instrument designs
- Manufacturing unique equipment
- Engineering consultancy
- Clear IP rules on experiment results
- Patents are not a (my) favourite tool

Being active in international, regional and local TT networks and incubators.





sef
Technologies

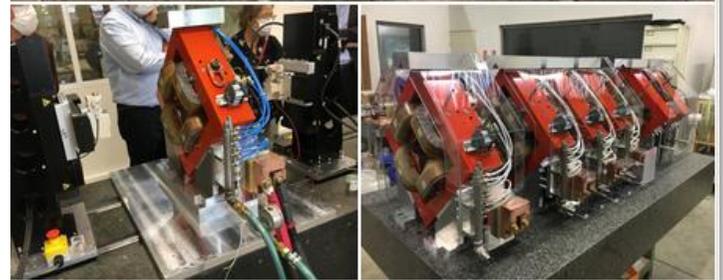
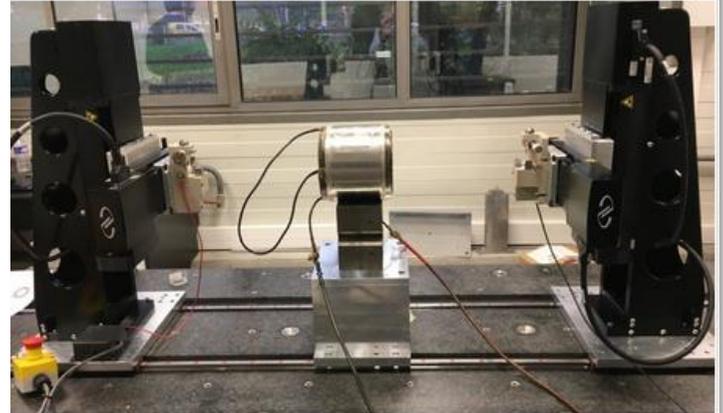
KTT action.
Trust.

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As part of our development, we acquired a magnetic measurement bench (Stretched Wired Bench) in early 2022. We carried out the magnetic measurements of the first 13 QP TITANS magnets manufactured for the CEA that we will deliver this month. Currently SEF is conducting magnetic measurements on the QP IX magnet manufactured for CERN.

These few are equipped, which saves them time and facilitates the physical installation of the magnets on their line.



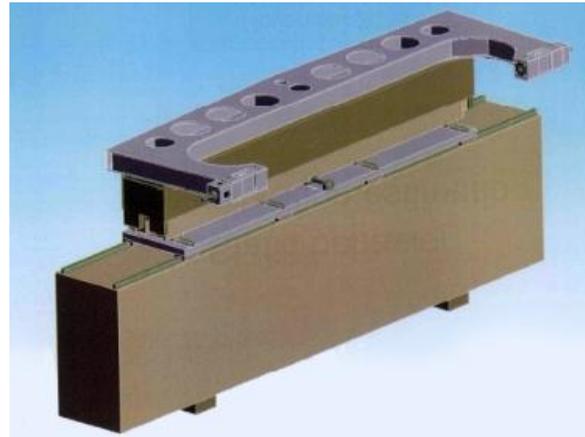


Magnetic measurements laboratory at ALBA Synchrotron

In addition to synchrotron light laboratories, ALBA has a set of highly specialised laboratories offering their expertise to external clients

EQUIPMENT

- 3D Hall probe bench
- Flipping coil bench
- Rotating coil bench
- Helmholtz coils
- Fixed stretch wire bench



SERVICES

- Accurate magnetic measurements (100 ppm) of high magnetic fields (1 to 2 T) of big structures (up 2 m long).
 - Measurement of coils for motors or other applications
 - Measurement of field maps of any type of magnetic structures
 - Measurement of multipole magnets (quadrupoles, sextupoles, etc.)
 - Measurement of pure permanent magnetic blocks, isolated or assembled in holders, and sorting and shimming for constructing insertion devices
- Modelisation and optimisation of magnetic designs using 3D simulation tools
- Calculation of main features of measured magnetic fields (integrals, high order harmonics and fiducialisation of magnetic fields with respect mechanical references)

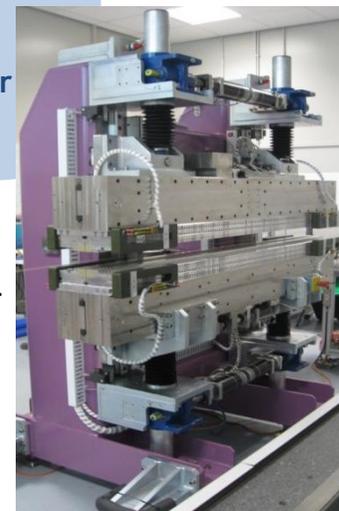


Dipole magnet

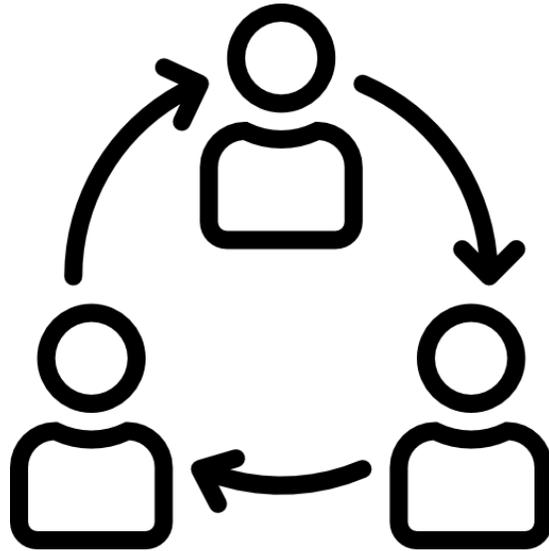


Multipole magnet

Undulator



Collaborating and Partnering with Industry

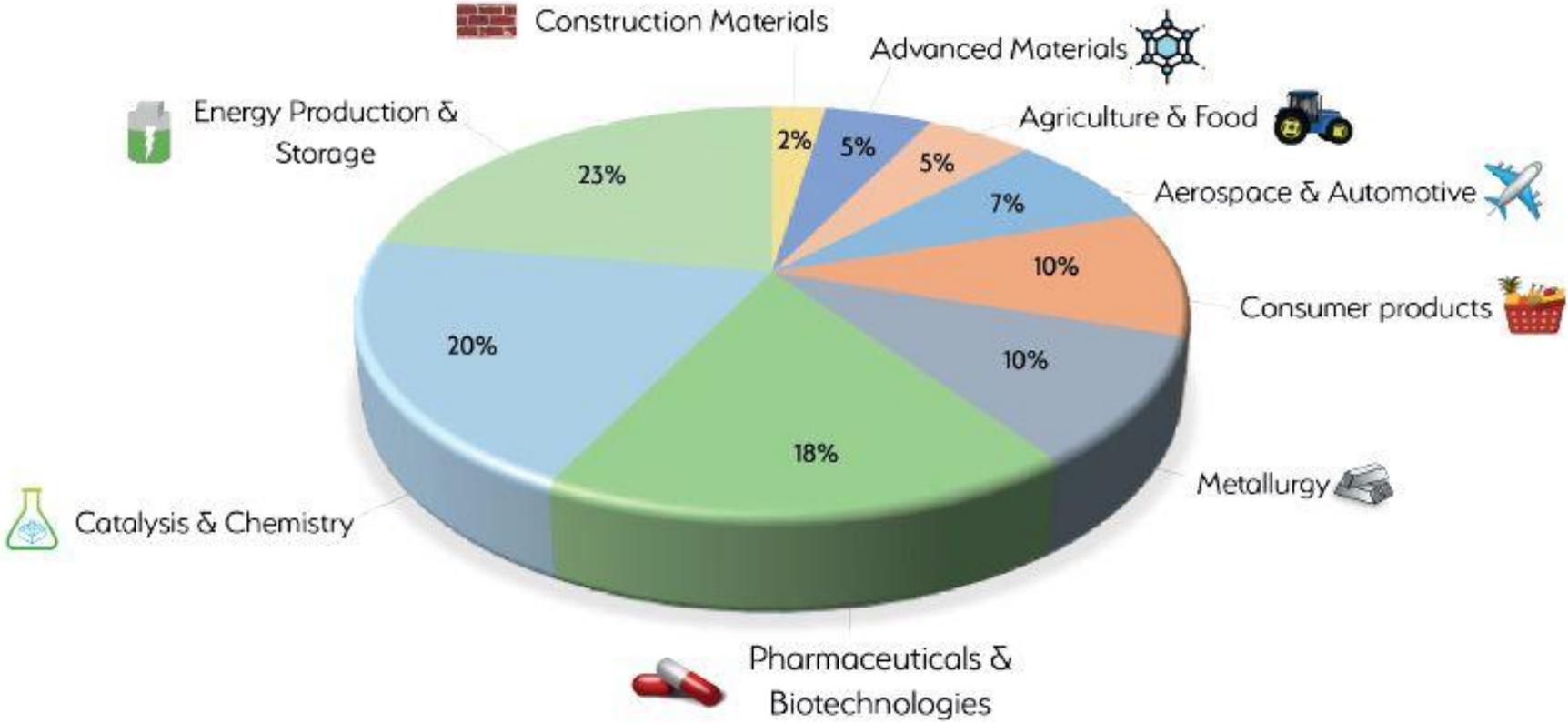




40 PhD projects using ESRF & ILL
40 industry partners driving the research challenges
Next generation ambassadors

www.innovaxn.eu





40 industry partners driving the research challenges
Next generation ambassadors

www.innovaxn.eu





A French-funded Public-Private Partnership 450M€

www.irtnanoelec.fr

Funded a “Pathfinder Programme” to create a better interface between the Grenoble-based facilities, ESRF, CEA-LETI, ILL and the nano/micro-electronics industry.

- 1. Sample preparation tools**
- 2. Instrumentation development**
- 3. Proof-of-concept**
- 4. Business development**



PRECISE FAULT INSERTION – BLINE ID09

Airbus has come to the ESRF to test how well electronic devices used in satellites can sustain cosmic radiation.



Testing electronics
for space
#ESRFforindustry



Might
Could
Should
Must
Like

Stakeholder and EU support is critical.
Facility engagement is key.
Outreach, outreach, outreach.



Extended ESRF
Business Development Office
Team



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industry@esrf.eu

Thank you for your attention

Ed Mitchell

Head of Business Development

mitchell@esrf.eu



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