
ESRF
The European Synchrotron

Balancing Open Innovation with Business Opportunities: Engagement at ESRF with Industry

Ed Mitchell
Head of Business Development
Hon. Prof. Keele University (UK)

THE SYNCHROTRON WITH AN INTERGOVERNMENTAL CONVENTION

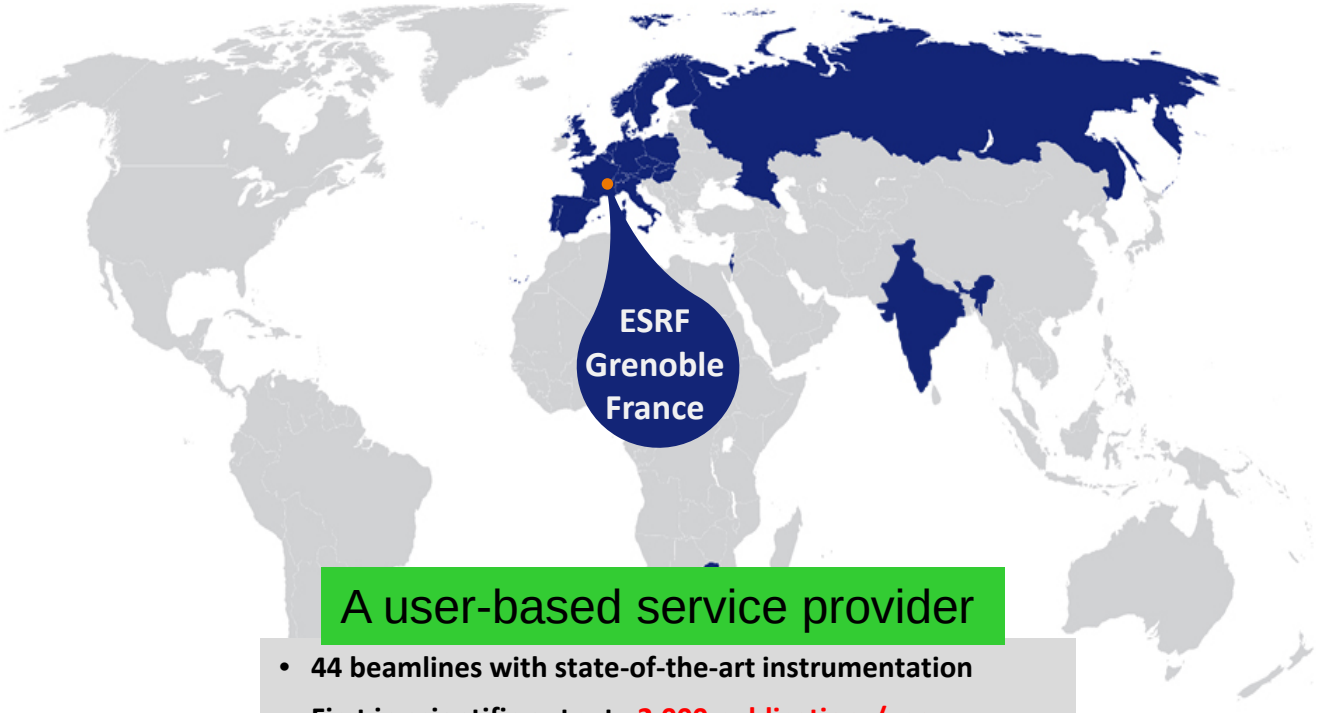
22 PARTNER COUNTRIES

13 Member states:

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

9 Scientific Associate countries:

Israel	1.5 %
Austria	1.3 %
Centralsync	1.05%
(Czech Republic, Hungary, Slovakia)	
Poland	1.0 %
Portugal	1.0 %
India	0.66 %
South Africa	0.30 %



A user-based service provider

- 44 beamlines with state-of-the-art instrumentation
- First in scientific output: 2,000 publications/year
- Leader in number of users: 7,000 user visits/year, more than 10,000 individual users in the last three years
- 4 Nobel Prizes amongst users
- Founding Member of the Grenoble Innovation Campus

AN AMBITIOUS AND INNOVATIVE REFURBISHMENT

2009
2015

Upgrade – 180 M€

In time and within budget

- ESFRI Roadmap project
- **Construction of 19 new-generation experimental stations to explore the nanoworld**
- Creation of a new ultra-stable experimental hall
- Improvement and refurbishment of most of the cutting-edge scientific equipment and accelerator infrastructure

2015
2022

Extremely Brilliant Source – 150 M€

Launched in June 2015

- Construction of a new storage ring, inside the existing structure, **with performance increased by a factor of 100**
- Construction of **new state-of-the-art beamlines**
- Ambitious instrumentation programme (optics, high-performance detectors)
- **Intensified big data strategy**

ESRF: MOTIVATED, AMBITIOUS, NEED TO LEARN

Open. Innovation.

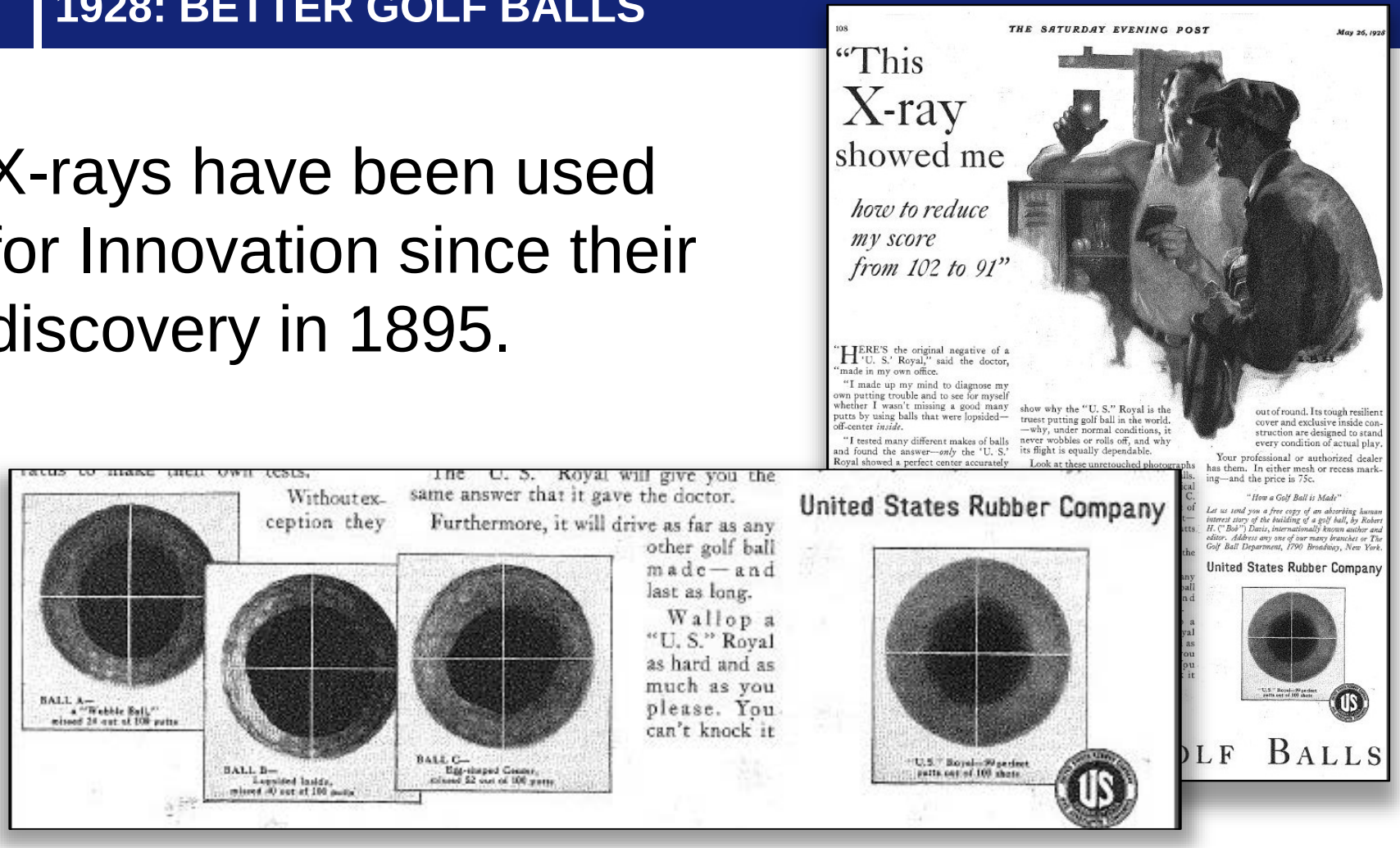
Allen: “Best professionals in the field today”

WHY DOES THE ESRF WORK WITH INDUSTRY?

- **IMPACT:** Demonstrated use of ESRF facilities, skills and intellectual property
- **CASH:** More resources
- **GOOD SCIENCE:** Challenging, real samples
- **CAREERS:** Wider opportunities for staff

1928: BETTER GOLF BALLS

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



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 unretouched 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

LF BALLS

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

BALL A—

BALL B—

BALL C—

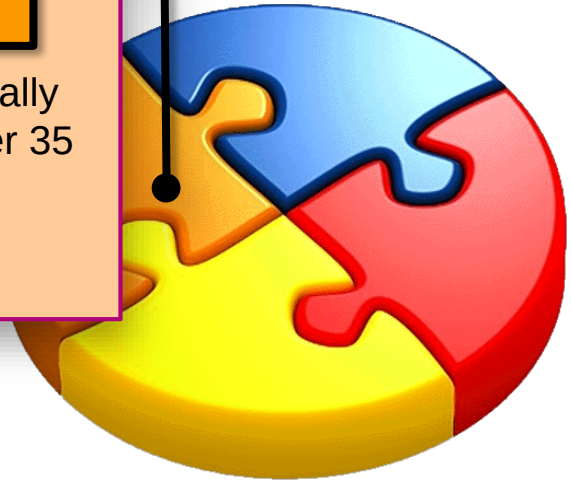
United States Rubber Company

HOW DOES ESRF ENABLE INNOVATION?

Feasibility access: “have a go”

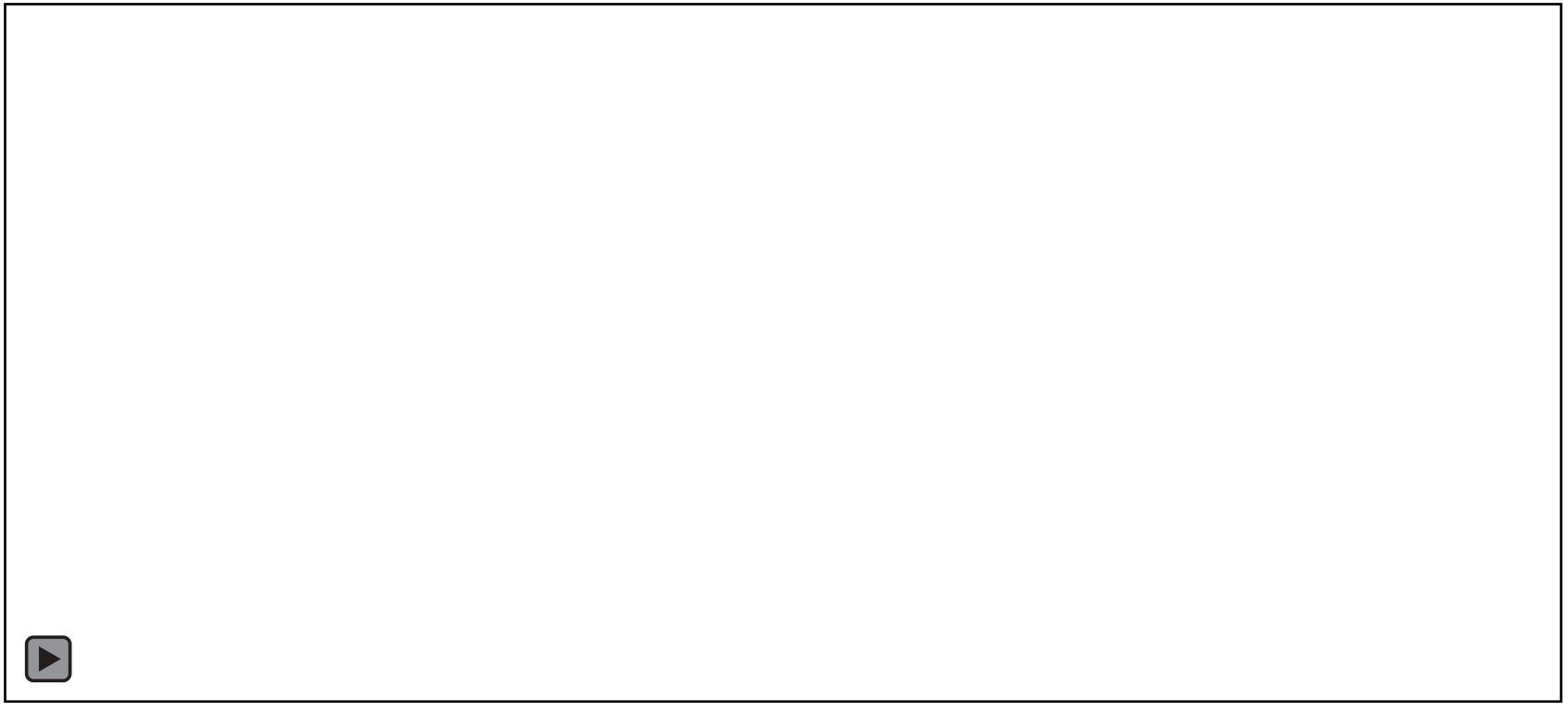
CLIENT SERVICES
Proprietary, Complex and Mail-in Services

- Generates 1.5M€ annually
- >100 unique clients over 35 countries
- Client owns IP rights
- Costs recovery

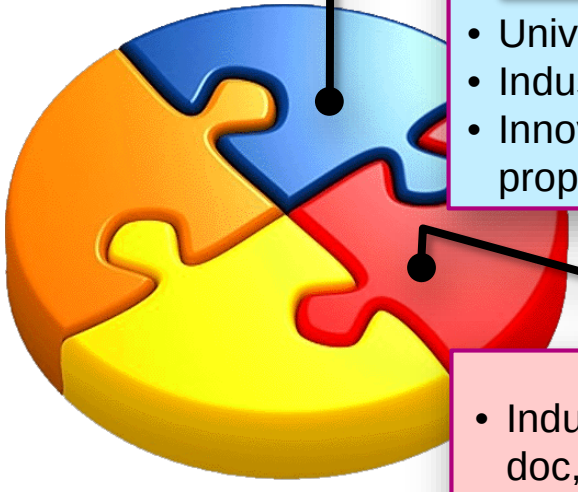


SERVICES AND TOOLS: GIVE INDUSTRY WHAT-THEY-NEED

INNOVATION BY PROPRIETARY ACCESS



HOW DOES ESRF ENABLE INNOVATION?



PUBLIC BEAM TIME
30% linked to Industry, Must be published

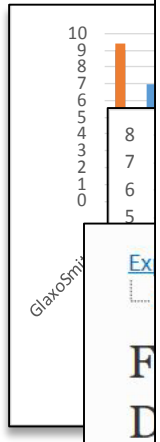
- Universities with industry
- Industry on its own
- Innovation-led long-term proposal

COLLABORATION & GRANTS

- Industry sponsored staff (post-doc, PhD, trainees…)
- Horizon 2020 + national

nanoscience foundries & fine analysis
nffa.europe
OPEN SESAME
NANOELEC.
CALIPSOplus

OPEN INNOVATION: PUBLICATIONS WITH INDUSTRY AUTHORS



Damage mechanisms in short glass fibre reinforced thermoplastic during in situ microtomography tensile tests

Article · May 2016 *with* 174 Reads

DOI: 10.1016/j.compositesb.2015.12.021

Cite this publication

1st Héloïse Rolland

8.74 · Ecole Nationale Supér

3rd G. Robert

23.63 · Solvay, Lyon, France

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Authors | Authors and

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Email author

1. LMT-Cac
2. MATEIS-
3. Saint-Go

NATURE CHEMICAL BIOLOGY | **ARTICLE**

Potent and selective bivalent inhibitors of BET bromodomains

Michael J Waring, Huawei Chen, Alfred A Rabow, Graeme Walker, Romel Bobby, Scott Boiko, Rob H Bradbury, Rowena Callis, Edwin Clark, Ian Dale, Danette L Daniels, Austin Dulak, Liz Flavell, Geoff Holdgate, Thomas A Jowitt, Alexey Kikhney, Mark McAlister, Jacqui Méndez, Derek Ogg, Joe Patel, Philip Petteruti, Graeme R Robb, Matthew B Robers, Sakina Saif, Natalie Stratton + ***et al.***

Affiliations | **Contributions** | **Corresponding authors**

Nature Chemical Biology **12**, 1097–1104 (2016) | doi:10.1038/nchembio.2210

Received 27 October 2015 | Accepted 02 September 2016 | Published online 24 October 2016

PRODUCT INNOVATION

INNOVATION AND INDUSTRIAL APPLICATIONS – P&G SIGN MASTER COLLABORATION AGREEMENT

Gerard Baillely (centre, P&G VP),
8 September 2017, ESRF Visitor Centre

ESRF and ILL have signed a Master Collaboration Agreement with P&G making us strategic research partners to P&G.

This signature sets up a collaboration framework between the partners to help advance pre-competitive industrial research with the support of our facilities and skills.

- **Joint PhD and Post-doc research projects**
- **Innovation-led Long-Term Proposals**
- **European and national funding proposals**
- **Spillover into proprietary research programme**

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:

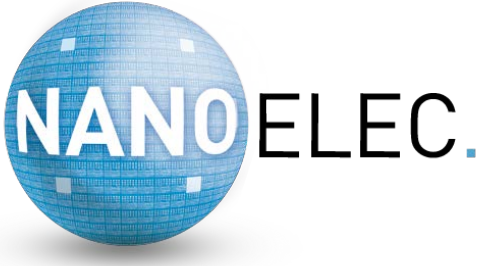
- Expensive and difficult to use
- Risky
- Fundamental science

Not for me.

THE GRENOBLE INNOVATION CAMPUS, FRANCE

www.giant-grenoble.org

BUILDING INDUSTRIAL CAPACITY & TRUST: A TWO-WAY ROAD



A French-funded Public-Private Partnership 450M€

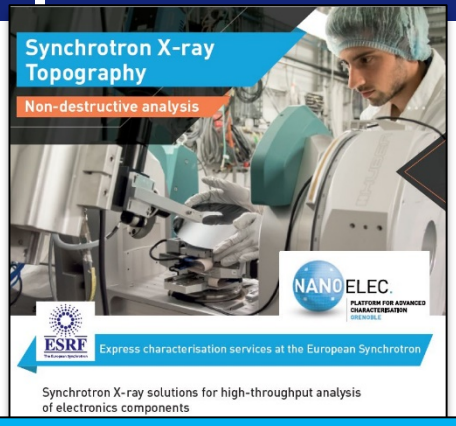
www.irtnanoelec.fr

Funding a Pathfinder Programme to create a better interface between the ESRF & ILL and the nano/micro-electronics industry.

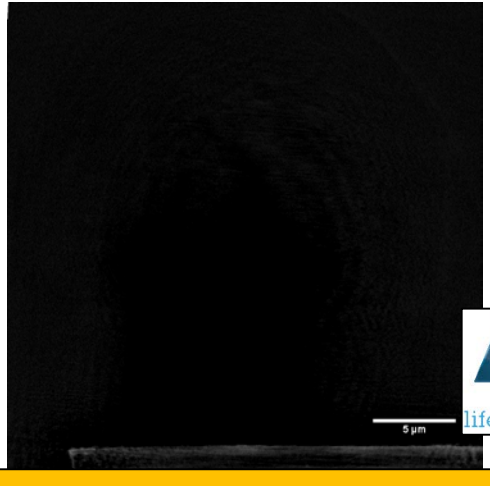
6.5M€ over 9 years for:

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

WHAT'S THE INNOVATION?



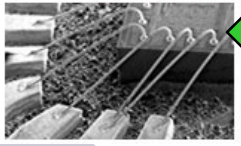
Right resources, right people, right equipment, right context.

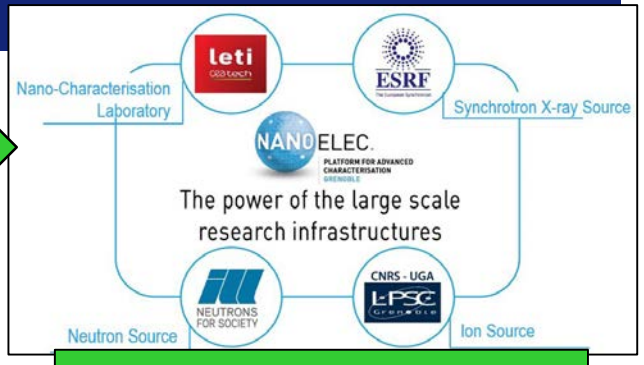


life.augmented

3 year Innovation-Led Project

SERMA TECHNOLOGIES





Single entry point

New services

Integrated industry offer

Joint research with industry

Cooperation with an SME

Right research, right people, right equipment, right context

CARAC 2017
4e édition

23 Novembre

Où ?
Campus EPN
71 avenue des Martyrs
38000 Grenoble

NANOELEC. PLATFORM FOR ADVANCED CHARACTERISATION GRENOBLE

La Plateforme pour la Caractérisation Avancée de Grenoble
Caractériser les matériaux pour pousser l'innovation

Venez nous défier!

Saisissez la chance de venir essayer nos installations

Prise en charge avec démonstration pratique

Apportez vos échantillons et vos questions:
des experts seront là pour vous répondre
et vous donner la chance de tester nos installations

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www.pac-grenoble.eu

SERMA TECHNOLOGIES
Université Joseph Fourier GRENOBLE
NANOELEC.

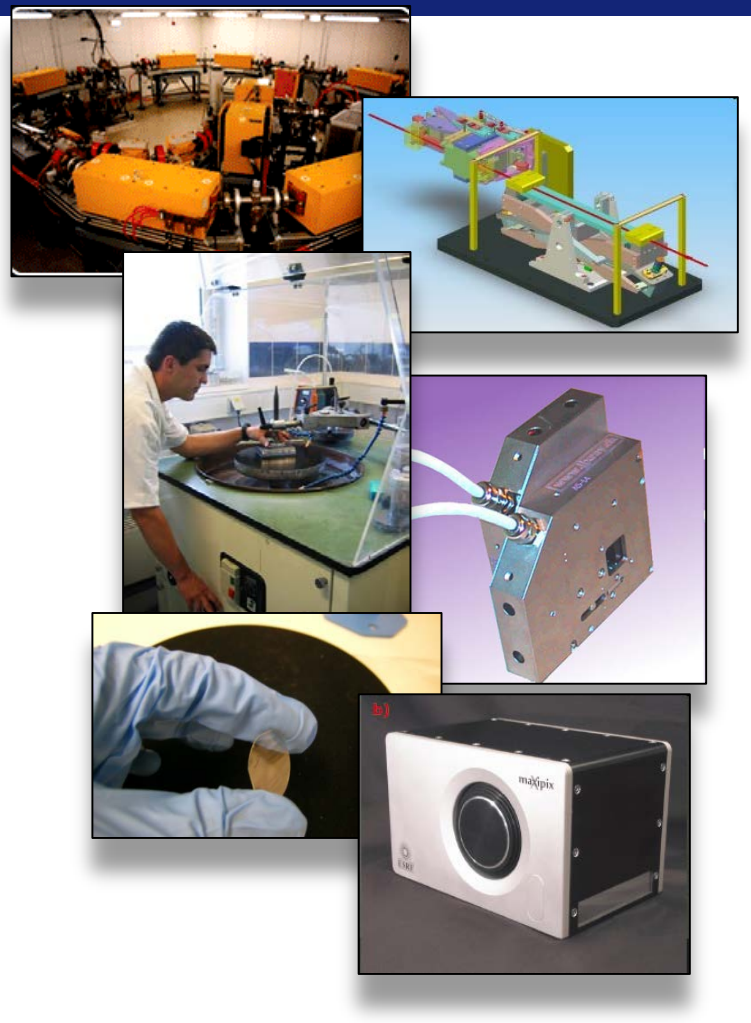
HOW DOES ESRF ENABLE INNOVATION?

TECH TRANSFER Instrumentation

- Licensing: 30 technologies
- In-house manufacturing
- Consultancy
- Generates 0.5M€ annually

EXPLOITING AND INNOVATING WITH ESRF IP

- Licensing technology
- Manufacturing unique equipment
- Engineering design
- Specialised labs
- Member of EIROForum IMK-TT, EU TTO-Circle, Linksium



Key part of our role as a synchrotron technology nursery.

SO WHAT DOESN'T WORK?

- Well, most of industry does not work and 22 countries to deal with
- Especially anything to do with SMEs
- Tracking industry use via peer review
- Tension between public/academic programme and "innovation" (often equated to "industry" and "confidential"); not fully accepted
- PCP is black box – can we have a PCP OPEN?
- Legal – T&C, clients forcing their conditions, burns resources
- Enough resources – internally and externally (ambassadors)
- Strong IP position – patents are a difficult tool for us! Do not want to manage an IP portfolio (no resources, skills). Metric vs distraction vs real value?
- Spin-offs

ESRF BUSINESS DEVELOPMENT OFFICE

ESRF Business Development Office
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www.esrf.eu/Industry

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Thank you for your attention