
ESRF
The European Synchrotron

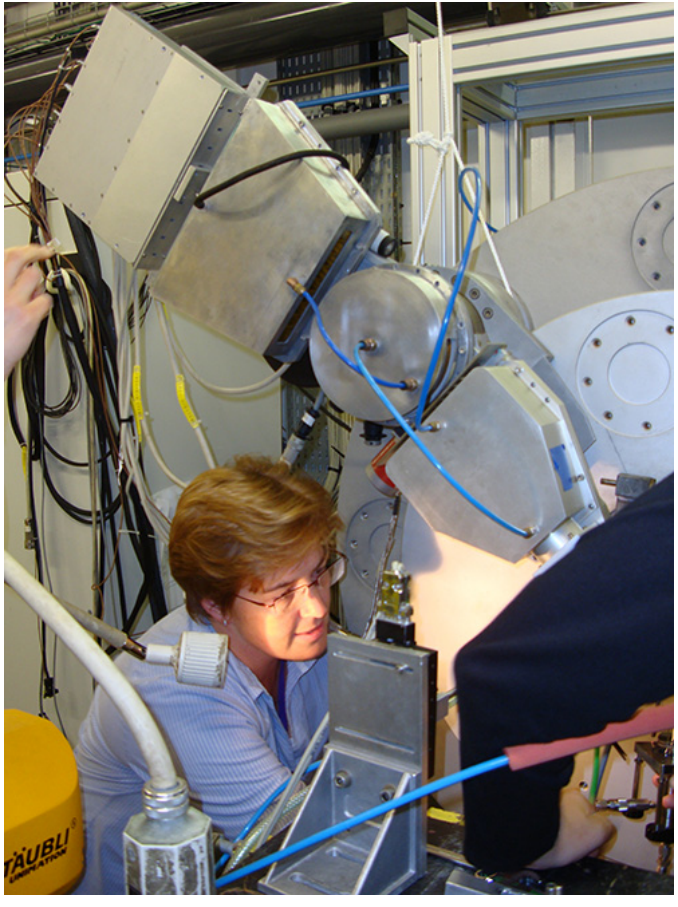
Synchrotrons as tools and drivers of innovation with industry

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

Esna du Plessis • 2nd

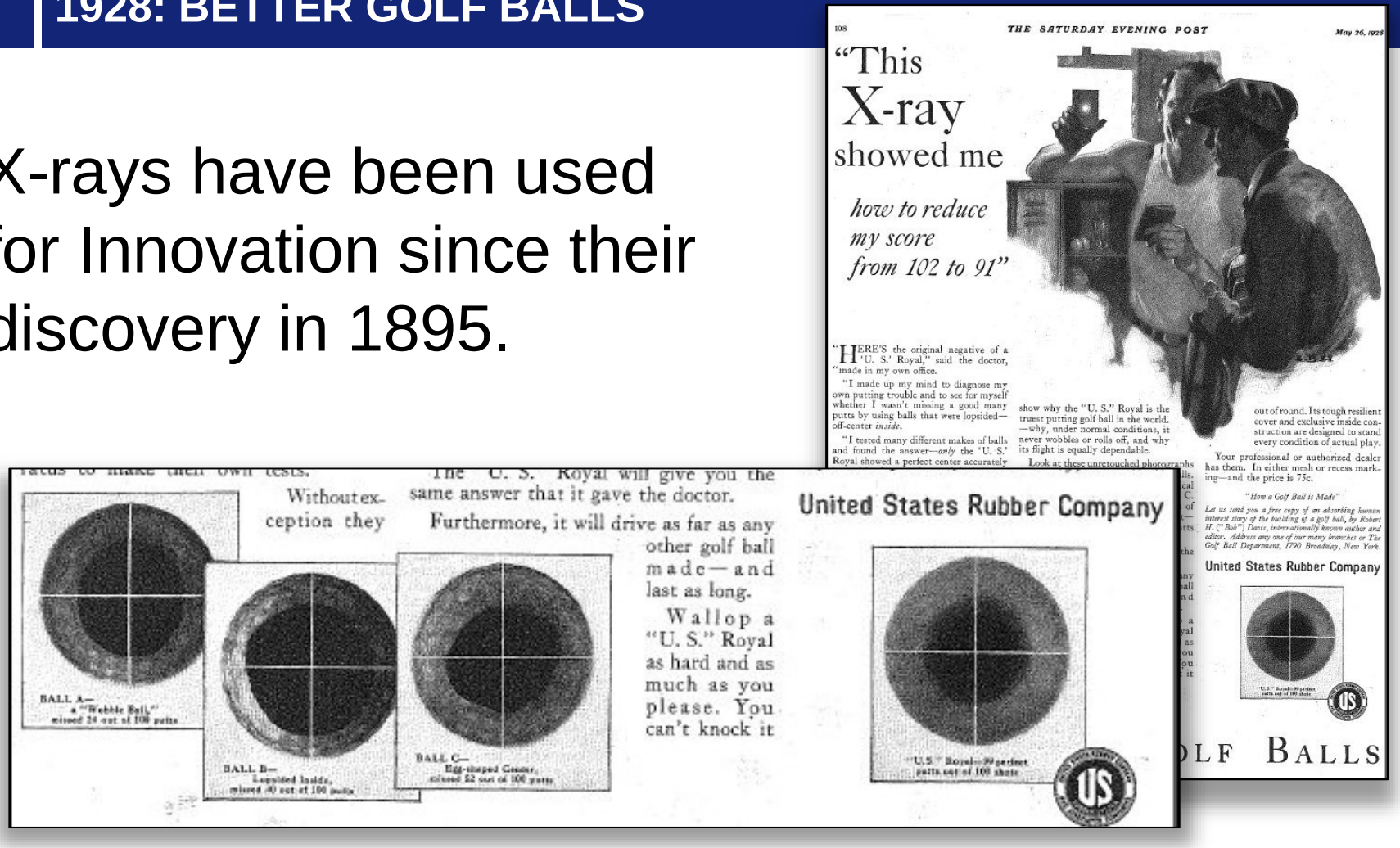
Technical Expert X-ray and Synchrotron at Sasol Group Technology

South Africa



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

ULTRA-HIGH SPEED SYNCHROTRON RADIOGRAPHY

PRIOR
PLM MEDICAL

AN “INDUSTRY MAGNET”?

CODEVELOPMENT & PROCUREMENT

PRODUCT INNOVATION

GOOD SCIENCE

CASH (IN)

NETWORK & TRAINING (IN and OUT)

Tom Blundell: “good ideas come from companies”

SYNCHROTRONS ARE IDEAL TOOLS TO LOOK AT STRUCTURE

PRODUCT INNOVATION

P&G SIGN MASTER COLLABORATION AGREEMENT WITH ESRF AND ILL

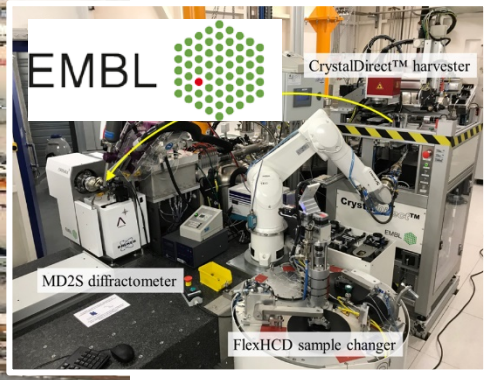
Gerard Baillely (centre, P&G VP),
8 September 2017, ESRF Visitor Centre

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.

SUPPORTING INDUSTRY WITH EFFICIENT, DATA PRODUCING BEAMLINES



astex pharmaceuticals

Automated Structural Biology beamlines are a **core facility** for pharma industry drug discovery.

SME'S SUPPORTING INDUSTRIAL EXPLOITATION OF LIGHT SOURCES

Xploraytion, based in Germany, uses ESRF beam time in **tomography and microscopy** with expertise in biotech and medtech.

Grenoble's **Novitom** is a routine user of the ESRF's **tomography beamlines**, adding value in experiment design and analysis to our X-ray facilities

Grenoble-based cell-free protein expression specialist **Synthelis** works with ESRF and EMBL to provide a **gene to protein structure service**.

Helix BioStructures, based in the US, is working with the ESRF for **structural biology service provision.**

A REGIONAL INDUSTRY PARTNERSHIP: BRIDGE BUILDING

NANOELEC.

A French-funded Public-Private Partnership 450M€

www.irtnanoelec.fr

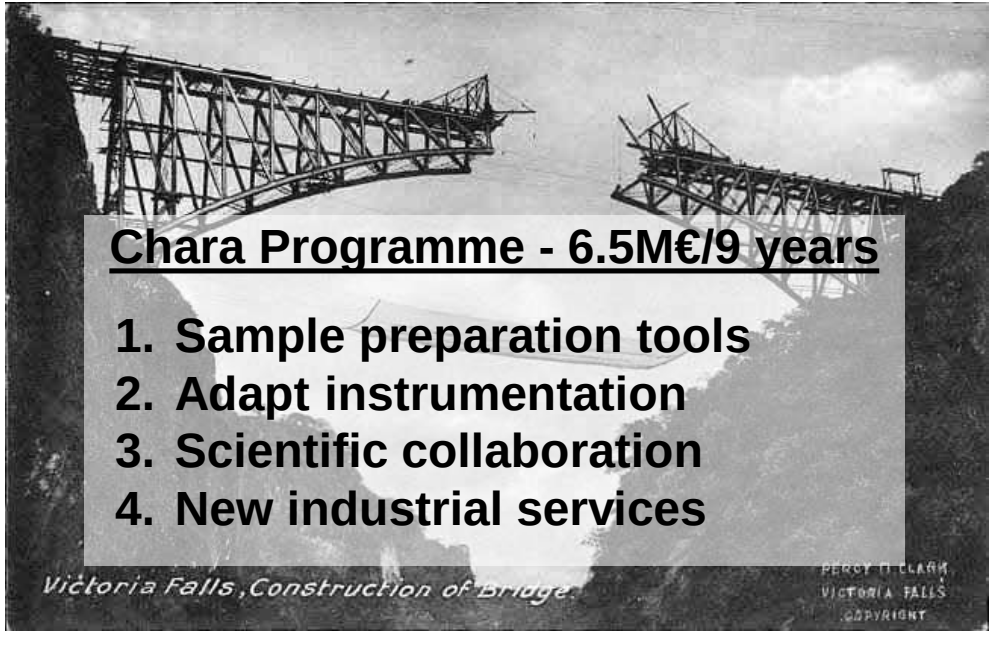
ACADEMIA

cea leti

ESRF

NEUTRONS FOR SCIENCE

LPSC Grenoble
Laboratoire de Physique Subatomique et de Cosmologie



Chara Programme - 6.5M€/9 years

1. Sample preparation tools
2. Adapt instrumentation
3. Scientific collaboration
4. New industrial services

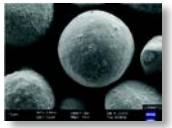
INDUSTRY

Soitec

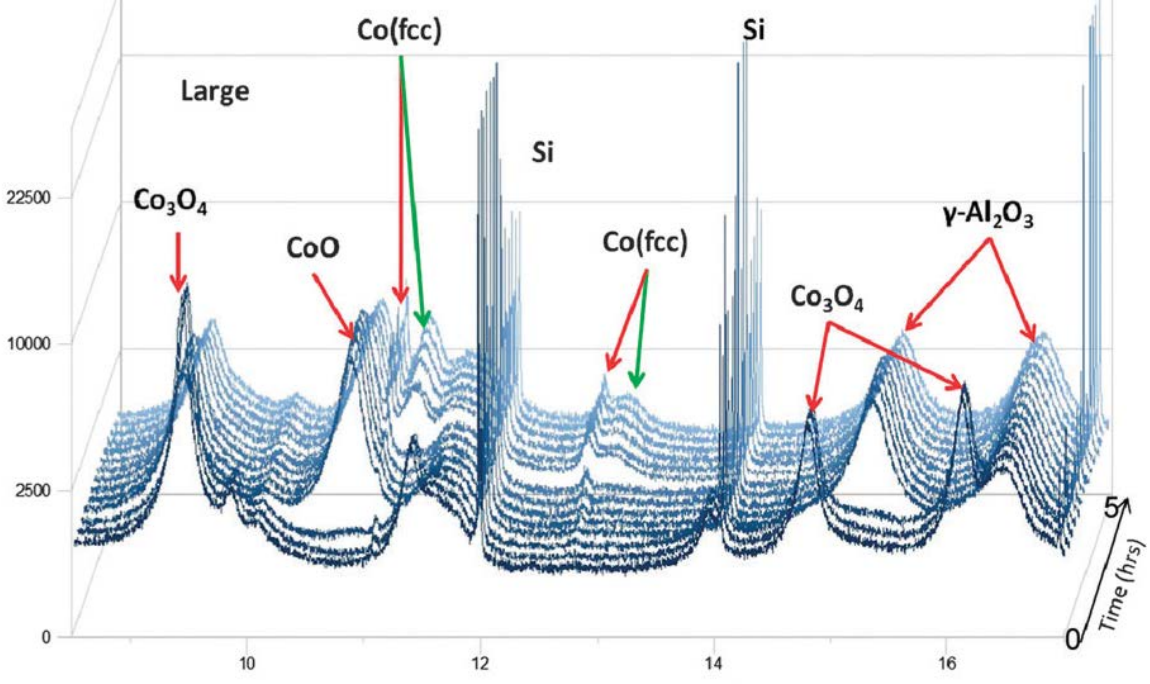
life.augmented

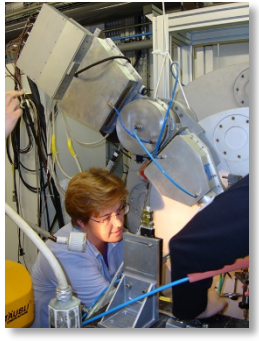
Schneider Electric

PUBLIC BEAMTIME: CO-BASED FISCHER-TROPSCH CATALYST



Improved Co catalysts by understanding the reduction pathway of supported cobalt oxides, and the intermediate species present during the activation.





In-situ powder diffraction and PDF to probe **both** crystallographic and local structure in situ using hard X-rays (ESRF ID31).

du Plessis et al., Phys.Chem. Chem. Phys., 2013, **15, 11640**

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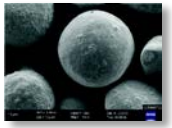

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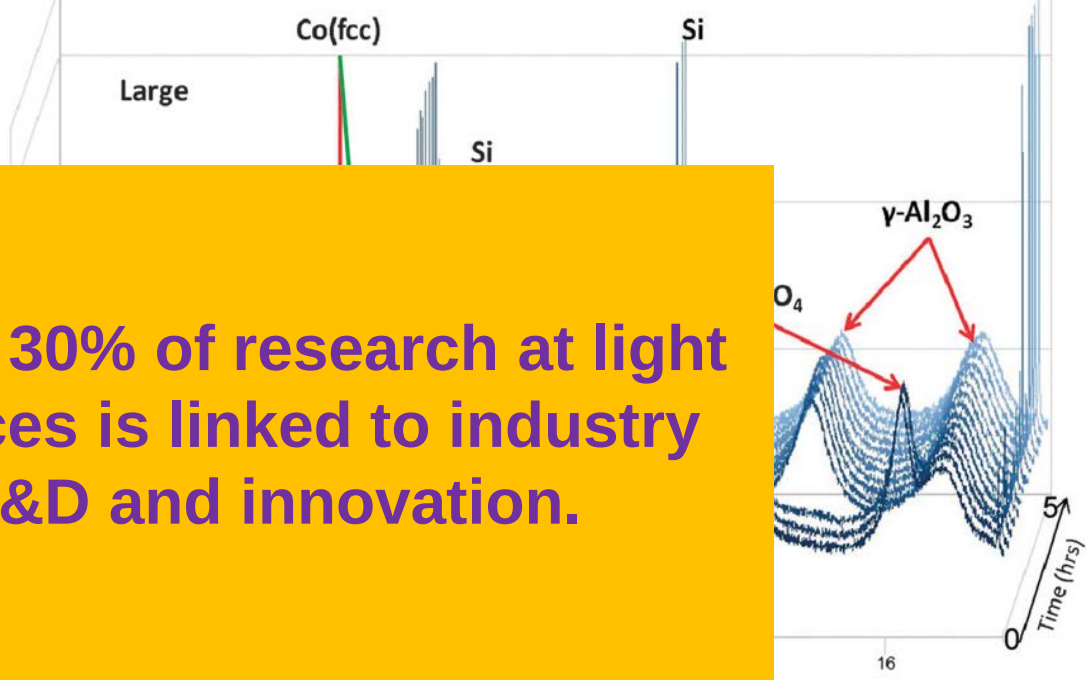
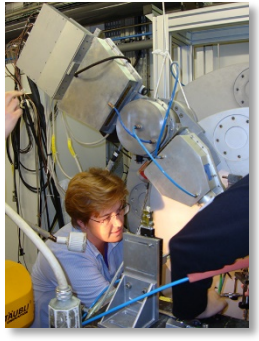


About 30% of research at light sources is linked to industry R&D and innovation.



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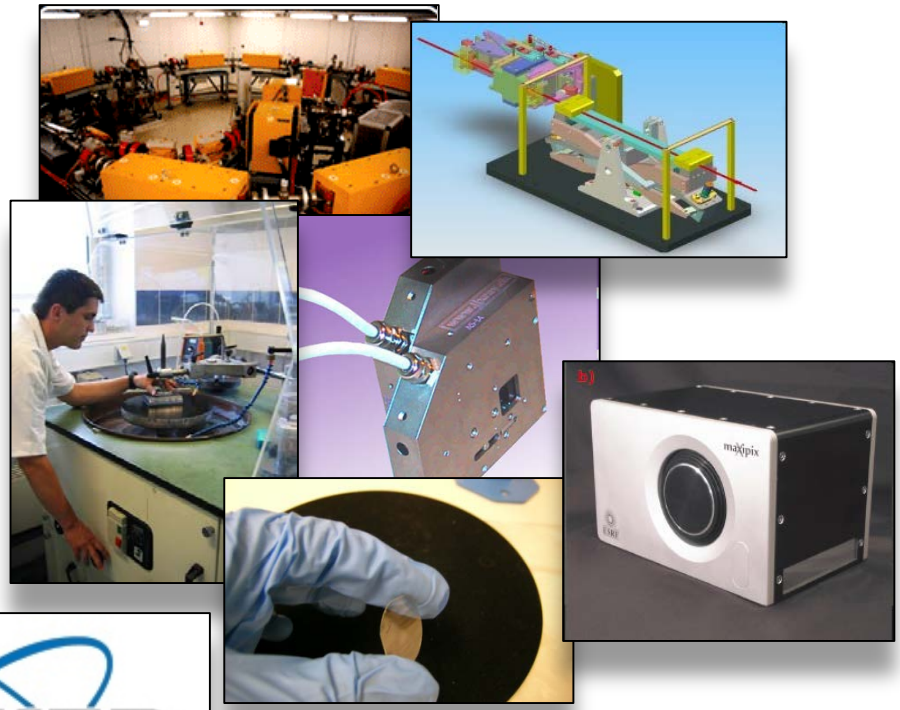
VALORISING LIGHT SOURCE TECHNOLOGY

TECH TRANSFER @ ESRF

- Licensing: 30 technologies
- In-house manufacturing
- Consultancy
- Co-development



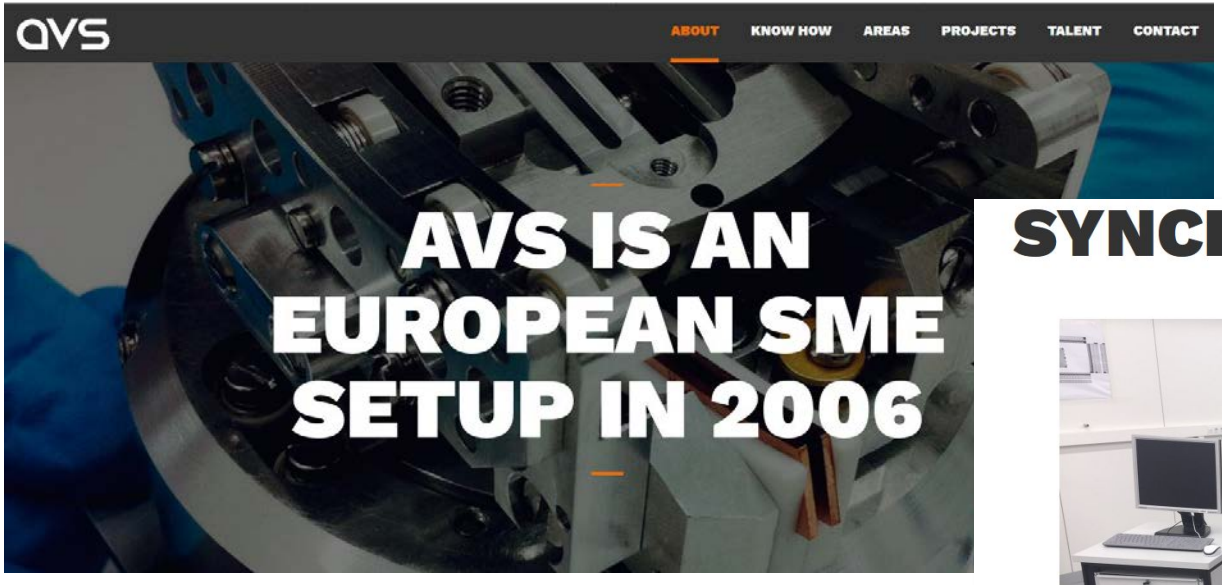
PAUL SCHERRER INSTITUT
PSI
DECTRIS
detecting the future

BRUKER

IRELEC
ALCEN

JJ X-RAY
Danish Science Design

WORKING WITH SME SUPPLIERS



avs
added value solutions

SYNCHROTRON GIRDER

CODEVELOPMENT: SEEDS TO FLOWERS

ATTRACT

The Project

ATTRACT aims to help **revamp Europe's economy** and improve people's lives by creating **products, services, companies** and **jobs**

ATTRACT Call for breakthrough ideas

ATTRACT has €17 million to fund 170 disruptive projects

The ATTRACT Project will fund 170 breakthrough technology concepts in the domain of detection and imaging technologies across Europe. The projects will be awarded €17 million in funding – €100,000 each in seed funding to carry out their idea.

Go!

The impact of the ESRF and its Upgrade Programme

Enhancing scientific excellence
Engaging a new generation of scientists
Training highly skilled staff
Providing direct economic returns
Disseminating knowhow to national centres

A light for Science ESRF

Thank you for your attention

ESRF Business Development Office
Grenoble, France

industry@esrf.eu

www.esrf.eu/Industry

Ed Mitchell
Head of Business Development
mitchell@esrf.fr