

## CUSTOMER TESTIMONIALS

*BASF has been working with ESS since its inception. However, in the past the effort of accessing a synchrotron facility was exorbitant. With ESS, this has become as simple as a phone call.*

**Dr Bernd Hinrichsen, BASF SE**

*We have further enhanced our analytical capability by forming a partnership with ESS. For complex tasks requiring a creative, technical or logistical solution, a specialist service such as S-XRPD was not available worldwide. Faced with exceptionally challenging deadlines our partnership with ESS has been very successful in improving our ability to deliver quick solutions.*

**Dr Arnaud Grandeury, Novartis Pharma**

*Trace analysis of solid forms by S-XRPD overcomes the limits of standard laboratory-XRPD. Thanks to ESS, such unique analysis has become easily achievable and we have already made use of it at different stages of our projects with excellent support from ESS.*

**Dr Ondrej Dammer, Zentiva**

*What appeals us most is the highly cooperative mindset of ESS, where the best solution for the client is of prime importance. ESS provides both best in class analytical solutions and consultancy in a very flexible way with drive and energy.*

**Sarah Le Meur & Dr Luc Aerts, UCB Pharma**

## « UNPRECEDENTED LEVEL OF DETECTION »



Using state-of-the-art synchrotron X-ray Powder diffraction instrumentation, ESS has pushed the level of detection boundaries down to 0.01 wt%.

## « WHERE CONVENTIONAL XRPD FAILS, SYNCHROTRON-XRPD WILL LIKELY SUCCEED »

Laboratory-XRPD is suitable for routine structural and quantification analysis of moderate difficulty. When you need to identify polymorphs with similar structure, quantification in complex mixtures and/or detection of very low levels of impurities (<0.1%) synchrotron-XRPD will likely do it.

## « A CUSTOMER ORIENTED COMPANY »

At Excelsus Structural Solutions (ESS) we offer easy and affordable access to sophisticated synchrotron characterization techniques tailored to fit our customers needs and deadlines. The validation of the services is offered upon request.

# INTERESTED TO LEARN MORE ABOUT OUR SERVICES? FEEL FREE TO CONTACT US



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# EXCELSUS

STRUCTURAL SOLUTIONS



# PUSHING THE LIMITS OF POWDER DIFFRACTION

A spin-off company of the Paul Scherrer Institute with headquarters in Villigen, Switzerland, composed of highly experienced PhD scientists,

## Excelsus Structural Solutions (ESS)

offers easy and affordable access to state-of-the-art synchrotron characterization techniques for the selection, development, manufacturing and IP protection of high-quality products, in particular pharmaceuticals.

FLEXIBILITY

CONFIDENTIALITY

EXPERTISE

INNOVATION

OPERATIONAL WORLDWIDE

## OVERVIEW OF OUR SERVICES

### ANALYTICAL SERVICES

We offer the following services :



High resolution measurements



Quantitative phase analysis



Special conditions (e.g. High-T/Low-T, High-pressure)



Pair Distribution Function

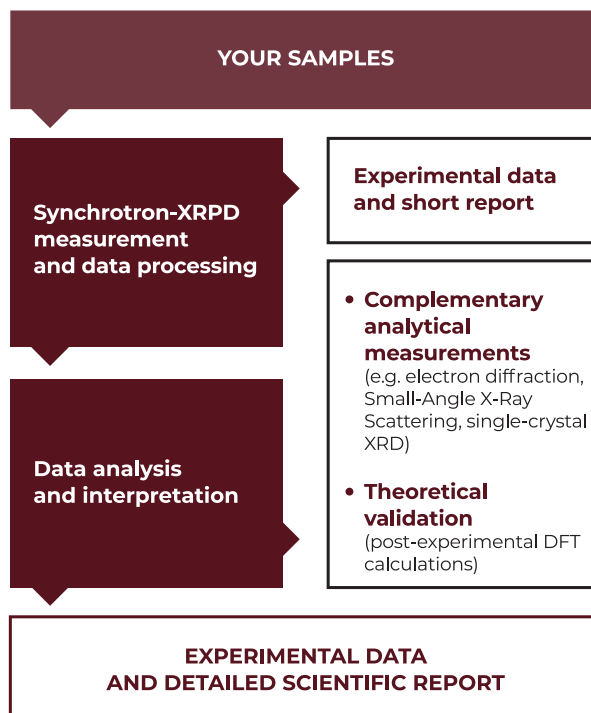


Trace analysis



In-situ time-resolved kinetic studies

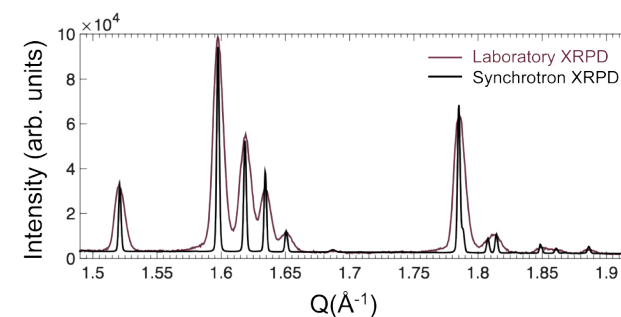
**From your samples to a short or detailed experimental report :** We commit to the highest standards of confidentiality requirements & can deliver these services within 15 days or faster from sample reception.



### SYNCHROTRON-X-RAY POWDER DIFFRACTION (S-XRPD) TO BOOST THE CHARACTERIZATION OF YOUR PRODUCTS

#### Significant advantages of S-XRPD over Lab-XRPD

- Greatly improved counting statistics
- Very fast measurements (milliseconds scale)
- Tunable wavelength
- Angular resolution down to  $0.003^\circ$  in  $2\theta$
- Ultra low Level of Detection (LOD) and Quantitation (LOQ) of pharmaceutical mixtures ( $< 0.02$  wt %)
- Improved indexing, ab-initio structure solution and microstructure analysis



### ADVANCED CONSULTING SERVICES

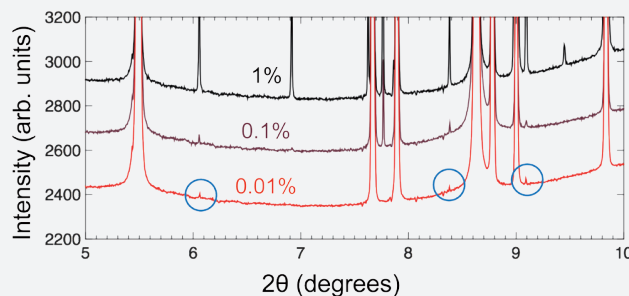
- Support to Intellectual Property (IP) rights protection (e.g. patent filing, patent litigation)
- Development of customized analytical methods & competencies to meet your requirements

#### AUTHORIZED AND TRAINED TO HANDLE SPECIAL SAMPLES

Sub-milligrams quantities  
Environment-sensitive compounds  
Highly-potent & highly-toxic compounds  
Controlled substances (SwissMedic license obtained in February 2016)

### R&D PROJECTS

We aim at remaining at the cutting-edge of powder diffraction to better support our customers. Examples include detection and quantification down to 0.01%wt, quantification of amorphous phases, absolute quantification & Pair Distribution Function.



### WHICH TYPE OF MEASUREMENT?

- Phase identification and quantification of Active Pharmaceutical Ingredients (APIs), excipients, contaminants & degradation products
- Support to patent application, life extension & litigation
- Counterfeit detection studies
- Aging studies
- Transformations kinetics
- Polymorph screening
- Assessment of phase purity & crystallinity
- Troubleshooting of deviations in manufacturing
- Complementary techniques (e.g. Small-Angle X-ray Scattering, electron diffraction)