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Press Release

PARK INNOVAARE welcomes Excelsus Structural Solutions

Excelsus Structural Solutions (Swiss) AG, Villigen, a spin-off company of the Paul Scherrer Institute (PSI), has moved to PARK INNOVAARE's deliveryLAB. Focusing on industrial R&D, Excelsus offers synchrotron-radiation-based analytical services to the industry, with emphasis on pharmaceuticals, food and chemicals.

Excelsus Structural Solutions (Swiss) AG received a warm welcome as a new resident high-tech company of PARK INNOVAARE from Prof. Daniel Kündig, CEO of PARK INNOVAARE, and Dr. Giorgio Travaglini, Head of the PSI Technology Transfer department. On April 27th, they met with Dr. Fabia Gozzo, founder and CEO of Excelsus, for a short ceremony at PARK INNOVAARE to symbolically mount the company's name plate on the outside wall of its new headquarters.


Excelsus provides a novel approach to synchrotron-based structural analyses

Excelsus offers a fast, easy and affordable access to state-of-the-art characterization tools for the structural and microstructural analysis of materials (pharmaceuticals, food and aroma compounds, pigments, polymers as well as various other chemicals), for the selection, development and manufacturing of high-quality products. Excelsus' core activities are based on unique high-resolution, in-situ and time-resolved Synchrotron X-Ray Powder Diffraction (S-XRPD) developed at the PSI and acknowledged worldwide. Furthermore, the company utilises a problem-solving approach to assist its industrial customers in the design and execution of unconventional experimental setups through scientific consulting and access to a wide scientific network.

A technology that meets the growing needs of the pharma industry

X-Ray Powder Diffraction (XRPD) is a powerful technique for the study of the structural and microstructural properties of materials. Its power relies in the direct and unique relationship between the X-ray powder diffraction pattern of a given substance and its structural order and/or disorder. In the field of pharmaceutical powders, XRPD is therefore considered the gold standard technique for the identification and quantification of pharmaceutical solid forms (i.e. polymorphs, solvates, hydrates, salts, co-crystals, amorphous). Pharmaceutical drug substances (also known as Active Pharmaceutical Ingredients, APIs) can, in fact, exist in different solid state forms as a result of their manufacturing and storage conditions. This so-called *polymorphism* of pharmaceuticals can have a profound effect on the quality or performance (e.g. solubility, bioavailability, efficacy, toxicity) of the finished drug.

X-Ray Powder Diffraction directly discriminates the different polymorphic forms of the same API through their powder diffraction patterns. However, it is the quality of a XRPD pattern that defines the accuracy and



reliability of the analysis, and therefore the wealth of information that can be extracted from a powder pattern. When it comes to data quality, nothing competes with Synchrotron X-Ray Powder Diffraction (S-XRPD), which is widely superior to laboratory XRPD in terms of angular resolution, counting statistics, energy tunability and fast acquisition times.

A complex technology made available to non-experts

While S-XRPD has been traditionally accessible only to expert scientists due to its intrinsic complexity and long waiting access times to synchrotron facilities, Excelsus has made the easy, fast and reliable access to this technology its mission, by offering its industrial customers an A-to-Z service: customized scientific consulting for the definition of the most appropriate experiments to be performed for a given problem, sample preparation, synchrotron data collection-analysis-interpretation and the generation of exhaustive scientific reports meeting the expectations of regulated industries such as pharma companies. “Just handing over nice synchrotron data to industrial customers is rarely all that is needed,” explains Dr. Fabia Gozzo. “We understand our customers’ needs and proactively propose solutions based on our large experience in this area, developed over the past 15 years. Our mission is not limited to delivering good data, it is also to coach our industrial customers and contribute to the solution of their challenging problems. Our customers’ needs occasionally go beyond our own expertise. In such cases we make our wide scientific network available to them. Our mission is, and will always be, to solve industrial scientific problems.”

A win-win choice for PARK INNOVAARE and Excelsus

Excelsus operates on a daily basis at the Swiss Light Source synchrotron facility at PSI. The close proximity to the institute is a key factor for the company’s success, hence the decision to join PARK INNOVAARE. The high concentration of outstanding know-how in combination with large research facilities offers companies optimum conditions for their business development. Excelsus has already had a strong market presence the past 4 years. Pharma giants, such as Cilag AG or Novartis Pharma AG, have already appreciated its unique offer and expertise. “With Excelsus being part of PARK INNOVAARE, we are gaining momentum for our growth. It is a big step forward for the development of the scientific park,” says Prof. Daniel Kündig. Also for Excelsus, the relocation to PARK INNOVAARE is certainly having a positive impact. In the middle of the vibrating PSI campus, the company can truly benefit from PARK INNOVAARE’s fast growing network, enlarge its customer basis and initiate new partnerships as well as facilitate the recruiting of experienced staff.

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PARK INNOVARE at the Paul Scherrer Institute PSI is one location of “Switzerland Innovation”. PARK INNOVAARE’s main focus is on innovations in the fields of accelerator technology, advanced materials & processes, humans & health, and energy. In order to deliver the best services for industrial research groups and spin- offs, we connect creative minds in large corporations, SME and research institutions, both domestic and international. Our mission: connect the right people to enable innovations to be made market-ready faster.

