



## NANOSTRUCTURED OPTICS WITH WORLD-RECORD RESOLUTION

### Problem – Challenge

X-ray microscopy provides new and more detailed insights than conventional light microscopy and helps researchers to understand the complex nano-world. However, every microscope is just as good as its optics and there is a true challenge for applications in the X-ray regime. Normal glass lenses that are typically used for visible light microscopy do not work in the X-ray range at all. Thus, they have to be replaced by a completely new approach to optical instrumentation by using nanostructured diffractive optics that have features at the sub-10-nm level.

### Solution

XRnanotech is a spin-off company from the Paul Scherrer Institute that was founded in 2020. The company develops and fabricates X-ray optics of the highest quality based on the smallest nanostructures. With its patented nanofabrication technology, the company has the possibility to extend the capabilities of optical systems into the extreme ultraviolet and X-ray range.

XRnanotech's nanostructured optics overcome the shortcomings of conventional technologies and push the resolution of microscopes to world-record levels enabling access to smallest structures by making the nano-world visible.

In recent months, the start-up has received numerous honors and awards. It was recognized as "Deep Tech Pioneer" by the Hello Tomorrow Global Challenge, making it one of the most promising deep tech projects. Furthermore, XRnanotech received financial support and funding from VentureKick, the "Swiss Business Incubation of CERN Technologies", the Gebert R f Foundation and the start-up funding program "ESA (European Space Agency) BIC Switzerland", amongst others. These enabled XRnanotech to successfully grow its business and create an initial network of international customers in France, the UK, Germany, Sweden, the USA, China and Korea.

