

Shinephi becomes ICFO?s 13th Spin-off

ICFO's new spin-off aims to address a critical need in semiconductor manufacturing and nanofabrication with proprietary interferometric imager technology it is developing, built on patented technology and over 10 years of research, technology development and business incubation at ICFO, which provides real-time, sub-nanometer surface-height resolution across the production line, outperforming optical profilometers and AFMs.

July 31, 2025

This week, ICFO is proud to announce the creation of its 13th Spin-off company, **shinephi**. The official launch of the spin-off company has been formally executed by Dr. **Roland Terborg** (CEO and co-founder), Dr. **Iris Cusini** (CTO and co-founder) and ICREA Prof. at ICFO **Valerio Pruneri** (Technology Advisor and co-founder), accompanied by Dr. **Silvia Carrasco**, Vice Director of Innovation, Sponsored Research and Public Engagement of ICFO, and Dr. **Emilia Pola**, Executive Director at ICREA.

shinephi was born as a result of more than a decade of research conducted by the research group led by ICREA Prof. at ICFO Valerio Pruneri. The research team was trying to find solutions and tools that could be fast, sensitive, stable and versatile for imaging solutions because they repeatedly encountered the fundamental limitations of existing technologies. That is, several metrology solutions in the market were often not sensitive and fast enough for industrial applications related to nanofabrication and the semiconductor industry. And more importantly, they proved to be very difficult to integrate easily into existing systems or production lines because they tended to be typically bulky systems.

Thus, during many years of research, technology development and business incubation within ICFO's KTT Launchpad, the team was able to develop an innovative technology that combined high sensitivity and speed with easy integration, called **Lateral-shear Interferometric Microscopy (LIM)**, a novel form of a common-path interferometer, which has proven to outperform optical profilometers and Atomic Force Microscopes (AFMs).

Unlike traditional interferometers, which had been often bulky and sensitive to vibrations, this approach showed to be inherently stable. The goal was to transform standard microscopes into powerful metrology tools using a simple, camera-like add-on fulfilling shinephi's goal to make the invisible visible, easily and effectively.

shinephi's mission is to provide advanced optical metrology and make it accessible to companies and laboratories in the material science and semiconductor sectors, enabling them to take control over their fabrication processes, overcome the limitations of current standards and see their samples in a new light.

The founding of the company represents a significant milestone, as **Roland Terborg** has emphasized. For him, i¿½after more than ten years of research, technology development a d business incubation at ICFO, it's amazing to finally launch shinephi! We are taking all th t scientific knowledge and turning it into a real solution for big industry problems. This is a huge moment for us, officially moving from the lab to the market!". shinephi's CTO **Joris Cusini**, who has a strong background in electronic engineering and software design for imaging systems, has also eagerly expressed her enthusiasm with this new achievement, by stating that, "Honestly, the most exciting part is seeing our technology actually working for our firs clients. Now that we have officially launched, we're going from a cool prototype to a rea product, and I am really excited!"

shinephi's LIM technology and its wide-ranging applications will be essential acros industries where precise measurement of microscopic height or refractive index variation

are significant. Bearing this in mind,**Silvia Carrasco** highlights that i¿½we are proud to s e deep-tech innovations developed at ICFO starting the rocky path to impact society. T e launch of shinephi is a clear example of how cutting-edge photonics research, in the han s of driven ICFOnians, can evolve into impactful industrial solutions that address industri l challenges in nanofabrication and semiconductor manufacturing.i ?½ As a clear example of this impact, **Valerio Pruneri** comments that the i¿½technolo y developed by the spin-off will allow foundries in the semiconductor industry, includi g producers of photonic integrated circuits, to measure chips and wafers with unprecedent d precision and speed . Finally, Terborg has also wanted to state the crucial role that ICFO has played in t e development of shinephi's technology. From the research carried out within Pruneri's gro p to the invaluable IP guidance and industrial connections from the KTT team, i¿½ICFO has provided the ideal ecosystem for a deep-tech venture like ours to grow. We are ery optimistic about the future and eager to see the discoveries our clients will make with our technology