



Quantonation communicates investment in Deep Physics startup Sensorium Technological Laboratories – Announcing contract on materials for Radiative Cooling and Water Harvesting with TII Abu Dhabi

Paris, France, Boston and Nashville, USA – 13th November 2023 - Quantonation the leading global quantum technology venture capital firm discloses a pre-seed investment in Vanderbilt University spin-out Sensorium Technological Laboratories (Sensorium TL), after a first year of operations perfecting its first product – the Tamm Sense high precision gas detector – and a contract with TII Abu Dhabi to develop a new range of products in climate tech.

“Born out of a decade of academic research in mid-infrared nanophotonics, our patented machine learning technology allows us to design metamaterials with tailored optical response. As a first application we engineered advanced optical gas sensors, tailored on our clients' requirements, able to identify trace amounts of arbitrary gases in complex chemical environments where standard sensors fail” said Sensorium TL CEO Prof. Joshua Caldwell. He completed: “Our first product is currently [under development](#) with primary applications in the semiconductor industry”. Other applications of this technology include highly precise remote sensing of greenhouse gases and CO₂, required for climate research, and also a key technology for carbon credit assessments.

A second application of the technology is in the field of Radiative Cooling. Radiative cooling is a phenomenon by which an object cools down by radiating thermal energy in the form of infrared radiation to its surroundings, including the atmosphere and outer space. Exploiting Sensorium TL's technology, the company is developing a new class of highly efficient materials to optimize radiative cooling and create completely passive and cost-effective solutions that can significantly enhance water availability by capturing and condensing moisture from the atmosphere. This attracted interest from the Technology Innovation Institute (TII), a global research center and applied research pillar of Abu Dhabi's Advanced Technology Research Council (ATRC) and led to a strategic partnership that Sensorium TL announced today. Prof. Simone De Liberato, CTO of Sensorium TL, expressed enthusiasm about the project's objectives, saying, "This collaboration with TII opens up new horizons for sustainable water solutions. By harnessing atmospheric humidity, we aim to improve water availability, especially in regions where water scarcity is a critical issue."

Other projects are under development, leveraging the potential of surface phonon polariton-based nano-photonics for infrared (3–100 μm) light sources, detectors, and modulators.

Dr. Christophe Jurczak, founding partner at Quantonation said: “The combination of materials science, AI, and highly precise simulations of light-matter interactions offers attractive possibilities for accessing invaluable information in wavelength ranges currently inaccessible with cost-effective sensors. The first range of products developed by Sensorium TL will finally - to quote the Nobel Laureate Prof. [Frank Wilczek](#) - “open the doors of perception to see the world as it really is”. The development in water harvesting was not actually in our investment thesis originally but this is a testament to the outstanding inventiveness of the team at Sensorium TL, and we’re convinced there are large markets ahead for mid-infrared nanophotonics.”

About Sensorium Technological Laboratories

Sensorium Technological Laboratories (STL) is designing and fabricating nanostructured and layered materials with tailored photonic properties. Co-founded by Prof. Josh Caldwell and Prof. Simone De Liberato, it is based in Nashville, TN (USA) and is funded by the venture capital firm Quantonation.

For more information and news: <https://www.sensoriumtl.com>

Contact: Simone De Liberato – sdeliberato@sensoriumtl.com

About Quantonation

Quantonation is the first early-stage VC fund dedicated to deep physics and quantum technologies. Field such as high-performance computation, medical imaging, or ultra-precise sensing are now driven by innovation based on these disruptive technologies. Quantonation aims at supporting their transition into commercially available products. Quantonation is headquartered in Paris, France, and in Boston, USA, with investments all over the world.

For more information and news: www.quantonation.com

Contact: Éléonore de Rose - eleonore@quantonation.com