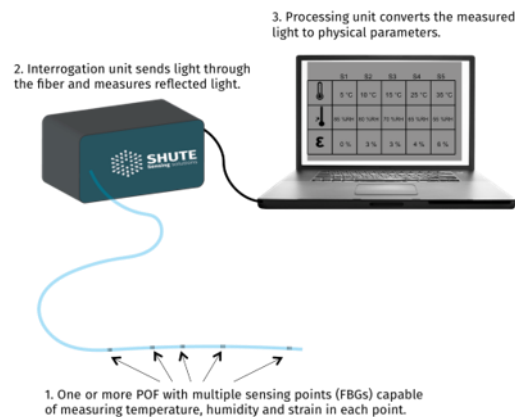
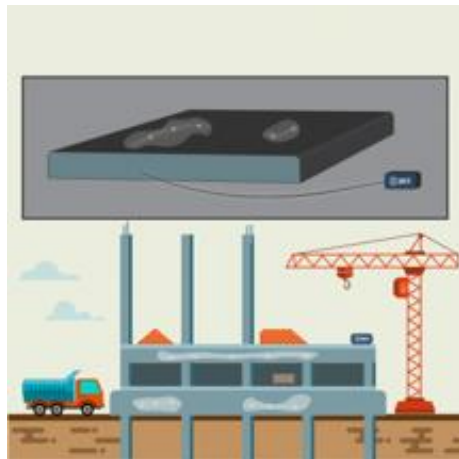




Fiber-based sensing solutions Strain, Humidity and Temperature Sensing



Value Proposition/USP

We have developed and provide a novel patent-protected Polymer Optical Fiber (POF) sensor system, which enables real-time monitoring of strain/stress, humidity and temperature in points along an optical fiber. The technology relies upon single-mode so-called micro-structured POFs (mPOFs) fabricated in-house and inscribed with Fiber Bragg Gratings (FBGs). FBGs are a well-known technology that functions as point sensors along the POF.

Business Opportunity/Objective/Commercial Perspectives

Compared to any existed silica fiber based sensing solution, our sensors are:

- Very flexible, robust, and easy to embed in hard or soft materials
- 30 times more sensitive to strain than silica fiber sensors and
- 20 times more sensitive to stress
- Stretchable – up to 6% elongation
- Humidity sensitive
- Biocompatible

Technology Description - example

SHUTE Sensing Solutions A/S has patented the world's first commercial plastic fiber sensor system, which precisely measures moisture in concrete over time. As “eyes” in the core of the construction, the system makes it easy, for contractors to get precise knowledge on how a concrete structure is drying. Optimizing the timing as to when the structure is ready for wooden/linoleum floors, paintwork and plaster walls to be installed. By embedding the fiber into the concrete, it can be used both as indicator as to when and how fast concrete cures, but also in the long run for continuous monitoring of the health of the concrete along the many measuring points of the fiber. The fibers are attached to a device that logs the sensor data online and displays it real-time to the user, who can be anywhere in the world.

Development Phase/Current State

Every solution that we deliver is hand tailored to solve your problem as effectively and efficiently as possible. No prior experience in working with Optical Fibers is necessary to benefit from our solution. All of your measured data will be presented exactly in the format you want, via a custom tailored interface, and the physical footprint of the solution can be altered to fit your specific requirements. Contact SHUTE to learn more and discuss your needs.

The inventors

Ole Bang (oban@fotonik.dtu.dk)
Kristian Nielsen (kn@shute.dk)

Contact Information

Ole Bang
+45 27 21 38 05
oban@fotonik.dtu.dk

Seeking

- Partners interested in monitoring of concrete drying and curing, and monitoring of strain, temperature humidity in general.
- Opportunities for collaboration and development with both academic and industrial partners.