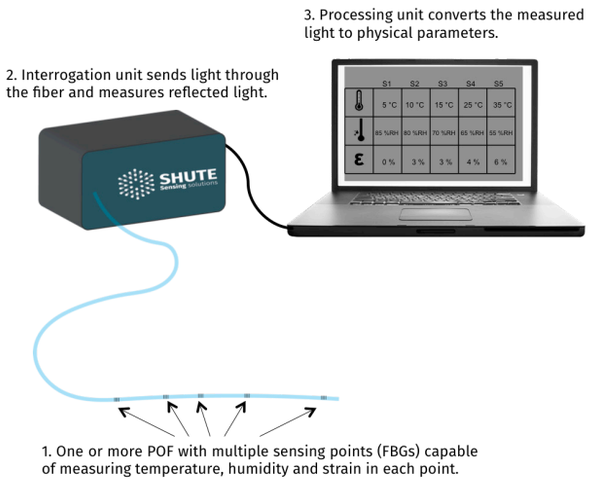
SHUTE Sensing Solutions A/S has developed a monitoring system that is based on a novel single-mode optical fiber sensor, called a micro-structured Polymer Optical Fiber (mPOF) sensor.

The mPOF sensors have the elasticity and flexibility of polymers while offering the optical properties of glass optical fibers. In order to make the sensing points, a Fiber Bragg Grating (FBG) is inscribed into the mPOF at pre-determined positions. The mPOF sensor is capable of measuring strain, humidity and temperature.

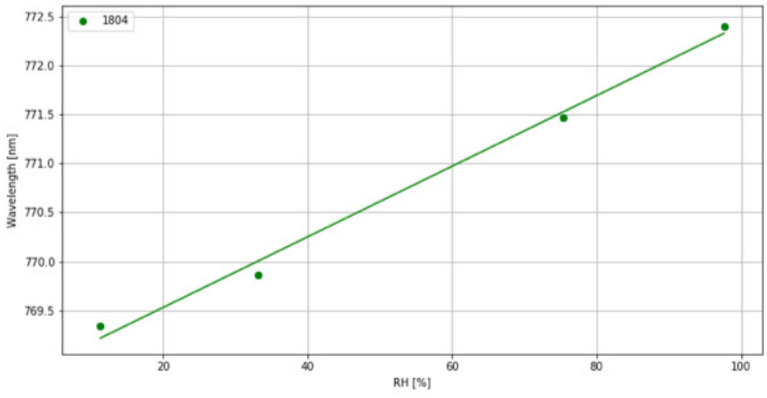
The mPOF sensor system

An mPOF sensor system will consist of three major components: mPOF sensors, interrogator and a software. The mPOF is attached to the interrogator. In order to get the required information from the sensing point an Interrogator is needed.

An Interrogator is consisting of a light source, an optical spectrum analyzer and data transmission unit. All components are assembled inside a rugged case in order to protect the components from potentially harsh working environments.



The data from the Interrogator will be transmitted to a simple cloud software solution, which also logs the data. In this way the site manager is able to document the load on the equipment and determine when maintenance is required. The sensing principle is that of Fiber Bragg Grating. The interrogator tracks the changes to the signal from the FBG, the change in signal correlates to the physical change at the sensing point. As an example, the response of the FBG to change in humidity is shown.



The sensing system is entirely optical. The signal is recorded by the interrogator and transmitted to cloud.

For more information visit www.shute.dk or feel free to call us on +45 2338 6728 to discuss how SHUTE technology can assist you in optimizing your concrete drying process.