

SHUTE Sensing Solutions A/S has developed a monitoring system based on a novel single-mode optical fiber, called a micro-structured Polymer Optical Fiber (mPOF). 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/stress**, **humidity** and **temperature**. Made of polymer, it is light weight, hair thin, noncorrosive, nonelectrical conducting, flexible and durable.

Sensing inside arteries

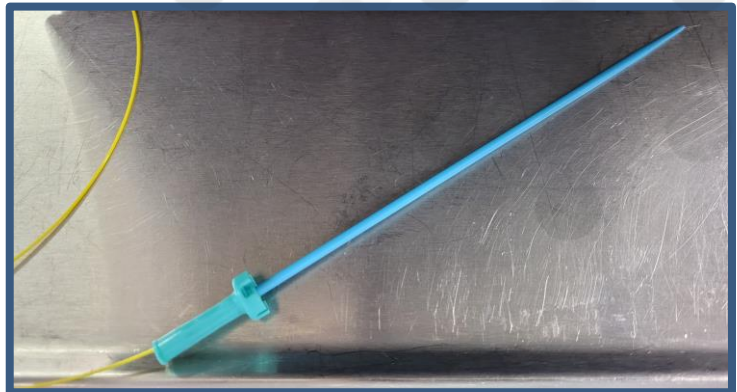
In cooperation with The MR Research Centre, Aarhus University, SHUTE tested its mPOF sensors inside the artery of a sedated pig. With the aim of measuring blood pressure intravascularly. The tests were performed on a 45 kilo, 3 months old, sedated pig.

Test purpose

To monitor the blood pressure of a sedated pig by placing a SHUTE sensor through a catheter into the pig's artery.

Result

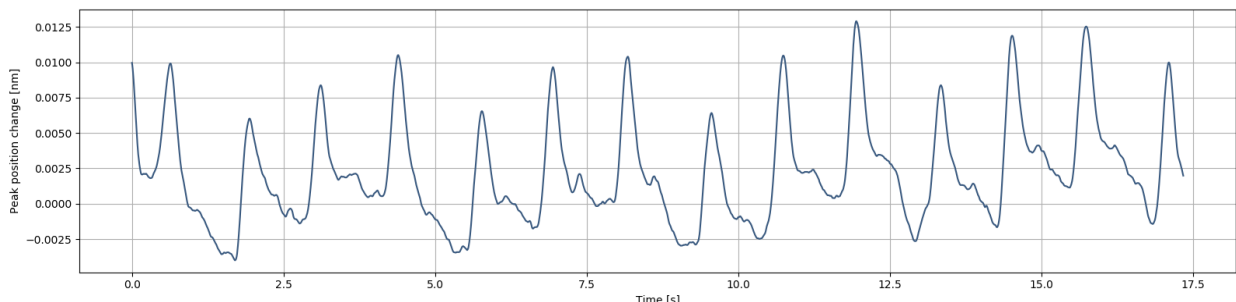
The SHUTE fiber sensor easily detected blood pressure as strain to the sensing point, see below graph.



"This opens up to a whole new application of intravascular sensing, and potentially sensing directly inside the heart and its vessels" Lab Manager, PhD, Esben S. S. Hansen argues. He continues: "With the promising results from our last efforts we are quite hopeful that we can use the sensors to track the pressure and force of the heart while being inside the MRI scanner environment. We will continue testing these novel MRI compatible invasive sensors and look for the possibilities it brings."



Intravascular pressure recordings



With lowpass filter, temperature compensated

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 sensing requirements.