



## PRESS RELEASE

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### **DOD SBIR Phase I Award**

Optrand is proud to announce the award of a Phase I SBIR to investigate ““Miniature Static/Dynamic Cylinder Pressure Sensor”. This SBIR Phase I aims at a proof of concept demonstration of a fiber optic-based 2.2mm diameter sensor that measures both static and dynamic components of the cylinder pressure up to 350 bar over the frequency range of 0Hz to 20 kHz, operates at tip temperatures up to 450°C, and has a service life up to 20 thousand hours or 5 billion cycles. A miniature sensing head and signal conditioner enable sensor integration with a diesel fuel injector or a stand-alone package. The proposed sensor has a flush mounted diaphragm resisting soot fouling while minimizing thermal shock error. In addition to pressure, the sensor measures head and signal conditioner temperatures enabling compensation for the diaphragm deflection and signal conditioner temperature dependences with an ultimate goal of +/-1% accuracy over the sensor head temperature range of -50°C to 450°C and signal conditioner temperature range of -50°C to 140°C. A microcontroller performs real time temperature compensation and provides high speed and high resolution analog and digital outputs enabling real time in-cycle control of fuel injection.

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