SENSOR DEVICE
AND
METHODS OF MAKING AND USING THE SAME

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Patent Application No. 62/930,192 (Attorney Docket No. 1101/2 PROV) filed on November 4, 2019 and the benefit of U.S. Provisional Patent Application No. 63/058,234 (Attorney Docket No. 1101/2 PROV 2) filed on July 29, 2020, the entire contents of which are all hereby incorporated herein by reference.

TECHNICAL FIELD

[0002] The present invention relates generally to sensors and more specifically to smart sensors for monitoring of machinery.

BACKGROUND

[0003] Condition monitoring is an important tool for preventing failures, increasing reliability, and reducing maintenance of machines. Such machines can include engines, compressors, turbines, rollers, gear boxes, fans, pumps, electric motors, and the like. Specifically, vibration and temperature are two key parameters in condition monitoring. By analyzing vibration and temperature data, early detection of machine failures can be realized. Such issues include bearing failures, bent shafts, over speed, resonance, out-of- alignment, out-of-balance, excessive clearance between parts (mechanical looseness), or the like.

[0004] As machinery and condition monitoring become more complex, improved methods and devices are needed for collection of performance data that may be used to improve efficiency and increase lifetime of the machinery while also reducing maintenance.