Ultra-sensitive Speckle Analyzing Sensor

Low-cost optical sensor detecting tiny vibrations, heat, or motion changes across industries.

Researchers at Purdue University have developed a low cost ultra-sensitive speckle analyzing sensor. This technology assembly comprises a probing laser, remote object of interest, scattering layer, and a detector. This additional scattering layer offers enhancements in sensitivity by a few orders of magnitude. Some of the physical or optical changes in the remote object that can be picked up with high sensitivity include vibration, heat expansion, translation, deformation, and rotation. This technology helps a wide range of industries that use optical sensors, such as automotive, environment control, security and monitoring, and material science research and development.

Advantages:

-Low-cost

-General purpose

Potential Applications:

-Optical Remote Sensor

TRL: 3

Intellectual Property:

Provisional-Gov. Funding, 2020-02-06, United States

Utility-Gov. Funding, 2021-01-15, United States

Keywords: Civil Engineering, Electrical Engineering, Optical Sensing

Technology ID

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Category

Digital Health & Medtech/Wearable Health Tech & Biosensors
Robotics & Automation/Perception & Sensing
Artificial Intelligence & Machine Learning/3D Optical Imaging & Industrial Metrology

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