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Device and Geometry for Zero-Power Sensing and Memory

Passive metamaterial transforms mechanical inputs into zero-power sensing, memory, and computation for agriculture, food, and pharma.

Researchers at Purdue University have developed a new material for zero-energy mechanical sensing, memory, and computation. Purdue researchers introduce a unique approach wherein mechanical inputs that vary in time and space can be transformed into a single morphological output to simultaneously store and compute data. The new system operates as a passive sensor, eliminating need for batteries to transmit data, such as in monitoring environmental exposure in agricultural and food and drug applications. In addition, the new metamaterial can be implemented in solar panels and biomedical wearable devices as a spatiotemporal sensor.

Advantages:

-Cost-effective

-Zero-power

-Highly sensitive

-Battery-free

Applications:

- Agriculture

- Food

- Pharmaceuticals

TRL: 3

Intellectual Property:

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Category

Biotechnology & Life Sciences/Biomarker Discovery & Diagnostics

Agriculture, Nutrition, & AgTech/Livestock & Animal Health Solutions

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