Microstructurally Engineered Perovskite Gas Sensors

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Categories:
- Materials and Manufacturing
- Mechanical Engineering

Keywords:
- Detection
- Hydrogen
- Industrial Safety
- Materials and Manufacturing
- Mechanical Engineering
- Sensors

Researchers at Purdue University have fine-tuned a new class of ReNiO3 based perovskite sensors for hydrogen gas (H2) detection. The sensors operate at a significantly higher sensitivity as compared to the current technologies. Traditional Hydrogen gas sensors have only been used so far in applications such as alarm systems which require rough estimation of H2 sensing. Selectivity and responsivity are a bottleneck with cost effectiveness. The specific lattice structure of the sensors developed by Purdue researchers ensures unique hydrogen capture capability. In testing at Purdue in the presence of H2, the resistance of the sensor increased rapidly up to several orders of magnitude giving a strong and accurate readout. This could help people working in critical conditions with a highly sensitive hydrogen sensor.

Advantages:
-Adaptable
-Increased accessibility
-Easy to operate
-High performance
-Cost effective

Potential Applications:
-Hydrogen sensor
-New materials research

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Intellectual Property:

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