

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 ReNiO_3 based perovskite sensors for hydrogen gas (H_2) 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 H_2 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 H_2 , 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

People:

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Intellectual Property:

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