

Electroactive Sealing

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- Mechanical Engineering

Keywords:

- Materials and Manufacturing
- Mechanical Engineering
- Seals
- Sensors

O-rings are a common component used in applications that require an airtight seal. Despite their simple design, they play a critical role in preventing leaks, which could cause severe damage to the overall device.

Researchers at Purdue University have developed an electroactive O-ring that is capable of resealing itself after detecting a leak. Made of a unique polymer, the ring expands when an electric current runs through it, resealing any detected leaks. The device is made with flexible materials that are designed to withstand high heat and pressure, making it suitable for most applications. The ability to reseal leaks dynamically provides a novel advantage in systems where immediate shutoff or repairs are not an option.

Advantages:

- Flexible material withstands high heat and pressure
- Allows quick repair in systems where immediate shutoff is not an option

Potential Applications:

- Sealing applications that use O-rings

People:

- Krutz, Gary W (Project leader)
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Intellectual Property:

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