

Can AI-Driven Devices Dissolve After Use?

MIT's bioresorbable batteries enable self-destructing ingestible tech for safer nuclear medicine.

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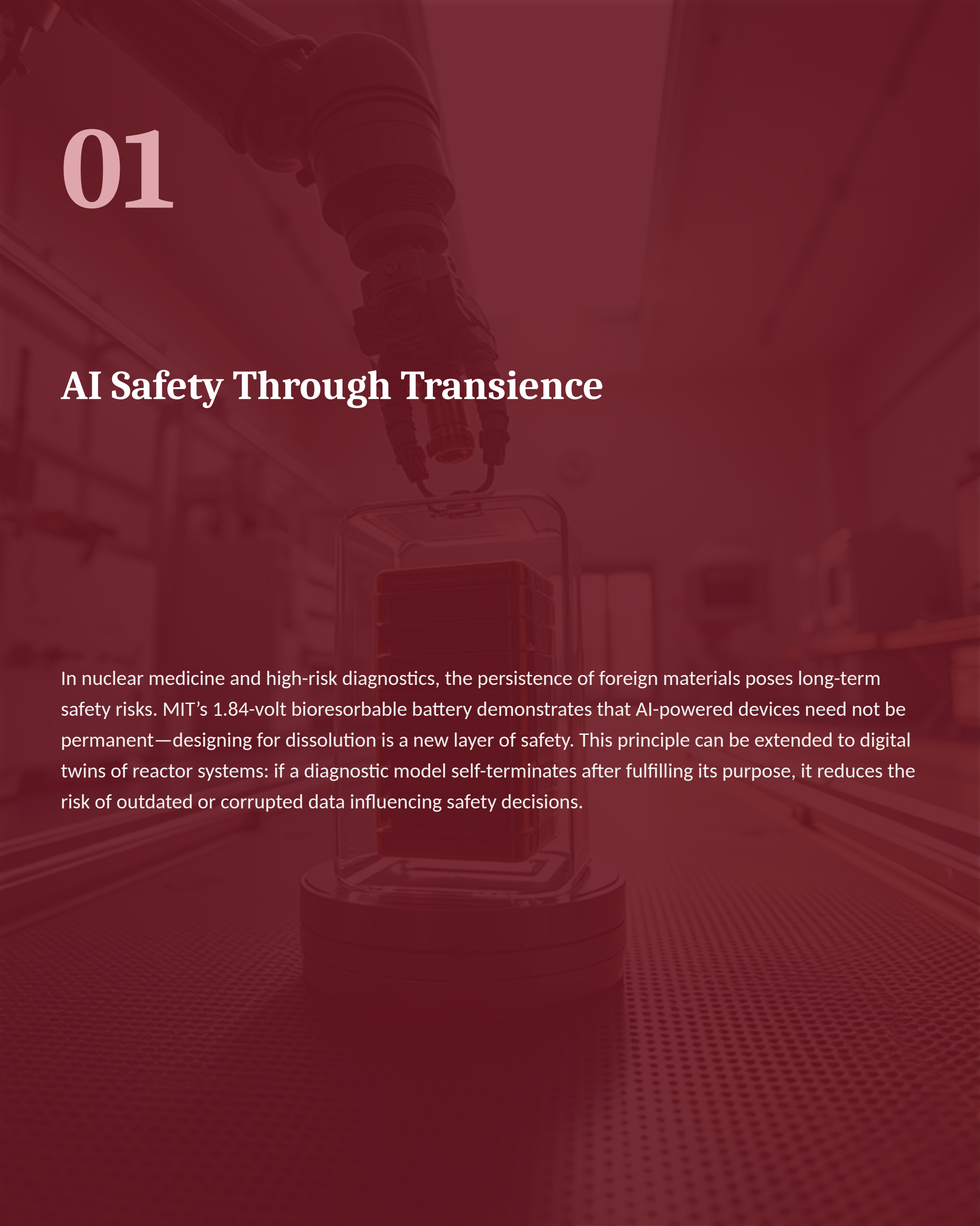
1.84 volts

Battery Output

The bioresorbable battery generates enough power to sustain clinical functions in the gastrointestinal tract.

This voltage output, measured during testing, is sufficient to power critical functions in transient ingestible devices—such as real-time sensing and targeted stimulation—without requiring external power sources. The ability to deliver consistent, reliable power while being fully bioresorbable marks a breakthrough for medical systems deployed in sensitive environments.

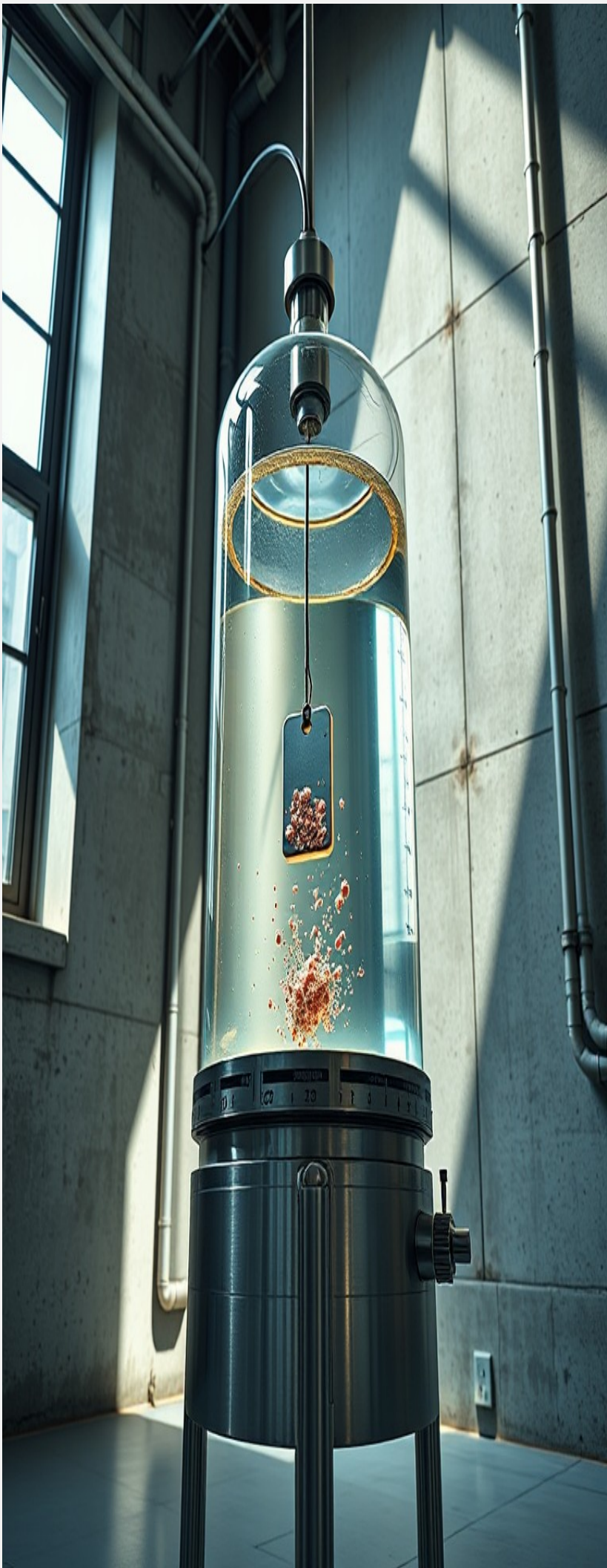


A background image of a robotic arm in a factory setting, overlaid with a semi-transparent red filter. The arm is positioned vertically, holding a small, clear, rectangular object. The scene is industrial, with various mechanical components and structures visible in the background.

01

AI Safety Through Transience

In nuclear medicine and high-risk diagnostics, the persistence of foreign materials poses long-term safety risks. MIT's 1.84-volt bioresorbable battery demonstrates that AI-powered devices need not be permanent—designing for dissolution is a new layer of safety. This principle can be extended to digital twins of reactor systems: if a diagnostic model self-terminates after fulfilling its purpose, it reduces the risk of outdated or corrupted data influencing safety decisions.



02

Dissolution as a Regulatory Feature

Regulators often demand full lifecycle accountability for medical and nuclear devices. MIT's work shows that dissolution isn't a flaw—it's a feature. By engineering systems to break down safely after mission completion, we shift the safety argument from 'can it survive?' to 'can it safely vanish?' This redefines the safety case for AI-driven monitoring systems in nuclear environments, where residual components could compromise long-term integrity.

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