TechBriefs

Savannah River National Laboratory

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At a glance

- Detects complex acoustic signature of a properly closed door
- Simple installation, setup and use
- Stand alone device or can be integrated into any standard consumer lock set
- Device transparent in normal use
- Not easily spoofed or defeated
- U.S. Patent 8,179,248

Contact Information

Partnering Opportunities

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Smart Latch™: Acoustic Door Latch Detector

A "smart" door lock for industrial and consumer applications has been developed by researchers at Savannah River Nuclear Solution's Savannah River National Laboratory (SRNL) which uses existing state-of-the-art neural network technology to acoustically monitor lock performance and in particular the latching event.

Eliminates failure to properly latch doors

Properly implemented, the device could meet or exceed the performance of the human ear in detecting the complex acoustic signature associated with a properly secured door. Smart Latch™ is a compelling product for households with children, elderly, or high traffic areas such as an office where a properly closed and latched door is essential for security and safety. As an inexpensive, battery powered, stand-alone device or as integrated into any standard consumer lock set, the device instantaneously analyzes the acoustic signatures associated with normal door operation and generates an alert, if a door is not latched correctly and within a set amount of time. It is not easily spoofed or defeated.

Easily integrates with standard consumer locksets

Physically the technology and battery would occupy approximately one cubic inch of space, and therefore could be easily integrated into many existing lockset designs. Depending on several factors, battery life should be approximately five years.

Technology transfer

The Savannah River National Laboratory (SRNL) is the U.S. Department of Energy's (DOE) applied research and development laboratory at the Savannah River Site (SRS).

With its wide spectrum and expertise in areas such as homeland security, hydrogen technology, materials, sensors, and environmental science, SRNL's cutting edge technology delivers high dividends to its customers.

The management and operating contractor for SRS and SRNL is Savannah River Nuclear Solutions, LLC. SRNS is responsible for transferring its technologies to the private sector so that these technologies may have the collateral benefit of enhancing U.S. economic competitiveness.

Initial testing promising

Installation, setup, and use are simple. For the lockset version of the technology, installation is essentially the same as any off-the-shelf lockset, and requires only standard tools. Once in place the user presses a concealed button and twice closes the door in a normal fashion. The lockset, then stores these signatures in memory and flashes (or beeps) indicating successful training. Installation and set up are then complete. In normal use the device is transparent, however if the door remains open for too long or is not properly latched, an audible and/or visual alarm is generated.

Partnering opportunities

A U.S. patent application has been filed on the Smart Latch™ apparatus and method.

SRNS invites interested companies with proven capabilities in this area of expertise to enter into a licensing agreement with SRNS to market this nuclear material detection system. Interested companies will be requested to submit a business plan setting forth company qualifications, strategies, activities, and milestones for commercializing this invention.

Qualifications should include past experience at bringing similar products to market, reasonable schedule for product launch, sufficient manufacturing capacity, established distribution networks, and evidence of sufficient financial resources for product development and launch.

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