

Motion sensitive mat compatible with all medical scanners

Invention

A motion-sensitive mat, compatible with all medical scanners, is designed to detect patient movement during scans. It minimizes motion-induced artifacts, alerts both the patient and technician when motion occurs, and plays a personalized message for the patient. The system optimizes the scan protocol based on the frequency and duration of the motion, allowing patients to move during the scan while automatically correcting for any distortions. This is achieved by continuously assessing the patient's position over time.

Features & Benefits

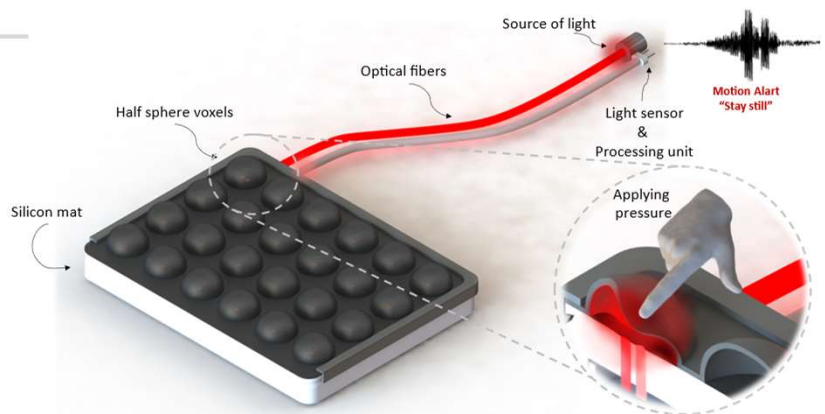
- **Metal-Free Design:** The mat contains no metal, enabling safe use inside MRI and CT scanners and avoiding interference with magnetic fields and making metal artifact.
- **Dense-Free Design:** The mat contains no dense material enabling use for PET, SPECT and CT.
- The device alerts the patient and technician upon detecting movement.
- Device play a personalized message for the patient and ask for staying stationary.
- **Real-Time Motion Detection:** The mat stops the scan immediately upon detecting movement, preventing unnecessary exposure and wasted scan time.
- **Automated Image Sequence Management:** Motion-corrupted image sequences are automatically excluded, eliminating the need for post-scan image correction or rescanning.

Intellectual Property

- **Patent:** « Method and System for Medical Imaging Scan Optimization »
- **Application number:** EP24214228.9
- **Priority date:** 20.11.2024
- **Inventors:** Amirhossein Sanaat, Habib Zaidi
- **Applicant:** University of Geneva

Key data

- **Detection Accuracy:** High sensitivity to micro-movements ensures precise motion detection.
- **Operational Testing:** Successfully tested across various MRI field strengths (1.5T, 3T, etc.), PET, CT, SPECT systems.
- **Integration:** Can be integrated on existing scanner workflows and software platforms.



Technology Readiness Level

The technology is currently at TRL 6: Prototype testing has been successfully conducted in a relevant environment, demonstrating efficacy and integration with MRI and PET/CT systems.



Applications

- Usable for all the medical scanners.
- Ideal for patients prone to involuntary movements like elderly and pediatric patient.
- Useable for all the hospitals and clinics for reducing the repeated scan caused by motion.
- Increase the physician' diagnosis confidence by correcting the motion and providing a map of patient motion.

Partnership sought

- Exclusive or non-exclusive licensing to industrial partners
- able to develop and commercialize the technology.
 - willing to leverage collaborative innovation funds available in Switzerland (Innosuisse).

Contact & Inquiries

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