Weapons detection system could make airports, public buildings safer

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Weapons detection technology being developed by McMaster researchers can't come soon enough for busy travelers.

The new system has the potential to use microwave radar and electromagnetic pulses to detect weapons without the privacy concerns or cost of the full-body scanners currently used in some airports.

"It is a device that you walk through. An electromagnetic pulse emits signals to the microwave radar, sent out through an antenna," said Natalia Nikolova, professor of electrical and computer engineering who is working on the project. "It is capable of detecting a handgun or a knife, but something small, like a set of keys for example, would not trigger the device."

Nikolova, Professor Emeritus John Bandler and Associate Professor Mohamed Bakr were recently awarded funding for their research by the Natural Sciences and Engineering Research Council of Canada. "Some countries disallow the use of full-body scanners on people under the age of 18, and many smaller airports can't afford to buy them, so there is a real opportunity for our technology to help," said Nikolova.

Unlike traditional metal detectors, microwave radar technology does not rely on the movement of the magnetic field, and microwaves can penetrate through clothing much more effectively.

"This technology could be used in many locations: schools, stadiums,

arenas, train, bus, and subway stations, and public and government buildings," said Nikolova.

According to the researchers, privacy and health concerns are minimal.

"Unlike full-body scanners, there is no image produced or displayed of your body. There is also much less need for physical interaction with security officials compared to both full-body scanners and traditional metal detectors, and the technology produces fewer waves than the average cell phone."

The team plans to research whether or not the system could also be used to detect explosives, which are largely made of plastic.

Provided by McMaster University

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