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Laser may be used as defense weapon

EVANSTON, Ill., Aug. 5 (UPI) -- Researchers at Northwestern University's Center for Quantum Devices in Illinois have demonstrated a laser that holds promise as a defense weapon.

The specialized diode laser could be used in both civilian and military applications, according to the researchers. Once optimized, the tiny laser could quickly detect explosives and chemical warfare agents early and warn against possible threats.

The Northwestern team, led by center director Manijeh Razeghi, became the first to create a quantum cascade laser, or QCL, which can operate continuously at high power and at room temperature.

"Our achievement is critical to building an extremely sensitive chemical detection system," said Razeghi. "One of the key elements in a successful system is the laser source. Both mid- and far-infrared diode lasers need to operate at room temperature, have high power -- greater than 100 milliwatts -- and be extremely small in order to keep the system portable. We have now demonstrated such a laser in the far-infrared wavelength range."