

# No more virtual pickpocketing of credit cards, thanks to new tap and pay technology

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(PhysOrg.com) -- With technology has come ease. These days, thanks to near-field communications (NFC) and radio frequency identification (RFID), consumers no longer have to swipe credit cards through an interrogative machine—they are able to simply wave their credit cards to make purchases or withdraw money from their bank accounts.

Such ease, however, also has brought with it theft and fraud. Researchers at the University of Pittsburgh Swanson School of Engineering have come up with a method to improve security through a new credit card design that allows a card to turn "on" and "off."

RFID tags and NFC credit cards are currently enabled to operate any time they're placed in an electromagnetic field. However, that can be dangerous, says Marlin Mickle, the Nickolas A. DeCecco Professor of Engineering and executive director of the RFID Center for Excellence in the Swanson School. That's because portable readers are now available for less than several hundred dollars, making it possible for thieves to simply pass a reader near an NFC credit card and charge purchases to it or extract cash from a bank account.

"Our new design integrates an antenna and other electrical circuitry that can be interrupted by a simple switch, like turning off the lights in the home or office," says Mickle. "The RFID or NFC credit card is disabled if left in a pocket or lying on a surface and unreadable by thieves using portable scanners."

With this new technology, [consumers](#) would simply hold RFID or NFC [credit cards](#) in a specified area—for example, on an emblem or some other identifying mark—when making a transaction. As long as the "switch" is held, the card is turned "on."

When returned to a wallet or purse and tactile contact is discontinued, the card automatically turns "off."

"This solution is simple and very inexpensive to integrate into the RFID and NFC credit card manufacturing process," Mickle says. "We have filed a patent application and hope to see the technology quickly adopted, once approved."

Provided by University of Pittsburgh

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