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**Electrical and Computer
Engineering**

Overview

Optically scannable codes are widely used for many applications throughout the world. Such codes may be formed in many shapes and configurations and scanned using any number of devices, e.g. cameras, laser scanner, and the like.

Description

This invention provides a reconfigurable polarized antenna that uses RF MEMS switches to alter its polarization and therefore improve the reception of the received signal. The normal code scan may be utilized in various circumstances, e.g. to provide security data, additional content or commands capable of directing or assisting a scanning device, etc.

LICENSING OPPORTUNITIES

A provisional patent for this technology is currently in place. South Dakota School of Mines Office of Economic Development is actively seeking exclusive and/or nonexclusive licensing opportunities. Joint development opportunities are also available.

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Impact and Benefits

Counterfeiting costs governments and private industries billions of dollars annually. As our QR code antennas can be printed using visible, covert/embedded or invisible inks, they can provide additional security or counterfeiting features to any device or product. Moreover, they can work with or even replace existing RFID tags. Enabling QR codes with radiating properties (as a receiving or transmitting antenna) adds a new dimension in their applicability as security devices that are hard-to detect and replicate. The QR code antenna can transmit a 'key' signal without which the product that bears that specific QR code would be counterfeit. This key signal can be changed (programmed and re-programmed) even remotely, based on mission requirements.