

## **Firm Discloses Patent Filing for Novel Metamaterial Wireless Antenna**

Fractal Antenna Systems disclosed a patent filing for a novel approach to better wireless antennas . Called 'fractal plasmonic surfaces' (FPS), the new antenna technology promises to provide wideband ability at low cost along with other unique features.

The technology exploits the use of fractals, intricate geometric figures made from scaling and applying a simple pattern. The fractals are placed closely making a doily-like surface layer in a unique antenna method. This system is a 'metamaterial' with electromagnetic attributes unattainable by other means.

Before the FPS invention, antennas were considered devices that were super sensitive to their environment and placement—and isolated to a specific location. With FPS, antenna placement and tuning are minor issues. In addition the gain of the FPS antenna depends solely on the area, and not how separate antennas are attached and 'phased'. The FPS approach also boasts that it is contactless and componentless.

Notes inventor Nathan Cohen:" The FPS essentially is one tiny antenna that makes copies of itself across a layer using surface waves that physicists call 'plasmons'. There's no direct connection or feed. Each of these little antennas add up to make the antenna analogy of a fly's eye. Covering one has no effect on the others. The problem of hand- smothering the antenna on smartphones, tablets, and other devices now becomes a thing of the past: the antenna has 'self configured'.

In addition, the FPS has wideband ability so one FPS does the work of several separate antennas. Adds Cohen: "We have to start looking at surfaces such as the back of a smartphone, wallpaper, a wallet, a printer, a washing machine, or a pill bottle, as a great place to embed an FPS and make the wireless internet of things a reality. The antenna is now no longer a compromising issue. There is a freedom of placement and use that is unprecedented in new applications. Put simply, whenever you see a surface, you can now think 'antenna'".

[www.fractenna.com](http://www.fractenna.com) [1]

**Posted by Janine E. Mooney, Associate Editor**

**Source URL (retrieved on 08/01/2014 - 3:48am):**

<http://www.wirelessdesignmag.com/news/2011/10/firm-discloses-patent-filing-novel-metamaterial-wireless-antenna>

## **Firm Discloses Patent Filing for Novel Metamaterial Wireless Antenna**

Published on Wireless Design & Development (<http://www.wirelessdesignmag.com>)

---

### **Links:**

[1] <http://www.fractenna.com>