



TECHNOLOGY AVAILABLE FOR LICENSING

Tunable Positive-Negative Permeability Devices

Provisional Patent application #61/245,289

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Details About the Invention:

The invention discloses a method to prepare Mu Negative (MNG) metamaterial-based electrically small antennas. The method of the invention reduces the resonant dimension of antennas while maintaining the necessary radiation features. A prototype of the antenna of the invention, a hemispherical negative permeability resonator excited by a slot aperture, has been characterized by Green's function analysis, demonstrating the advantages in size and performance.

Benefits of the Invention:

The invention achieves small antennas with the use of negative permeability materials. The antennas operate in the negative mu region, which permits one to make them as small as needed. The antennas have very large bandwidth and high radiation efficiency.

Advantages

- Small size
- Wide impedance bandwidth
- Higher efficiency

The Bottom Line:

The global metamaterials market is rapidly growing, and is expected to reach \$1.7 billion by 2018. There is a wide range of possible applications for this technology. The invention improves upon earlier methods, which are at a disadvantage due to their narrow antenna impedance bandwidth and very low radiation efficiency. The invention holds great significance for the field of communication antennas and sensors.

For More Information:

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