ANTENNA MINIATURIZATION

NANOHMICS

MICROWAVE COMPONENT MINIATURIZATION

Nanohmics, Inc. has developed a ferrite paint for miniaturization of flexible printed electronics. In one use case, using a ferrite layer as a substrate results in roughly 2x miniaturization of a printed patch antenna (see Figures on right).

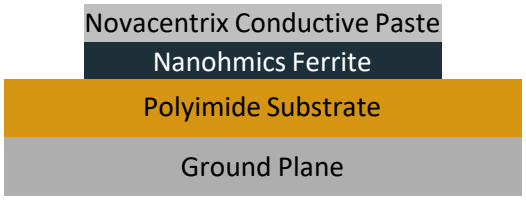
The ferrite material combines an elevated magnetic permeability and electric permittivity, which halves the antenna size with little to no performance loss. In comparison, using substrate materials with only an elevated permittivity leads to substantial performance loss as miniaturization increases.

The paint may be deposited with a doctor blade or even a paintbrush. Nanohmics' ferrite paint is used in combination with the PulseForge line of photonic sintering tools for rapid sintering into a densified ceramic layer with processing speeds on the order of 1 meter/minute.

CAPABILITIES

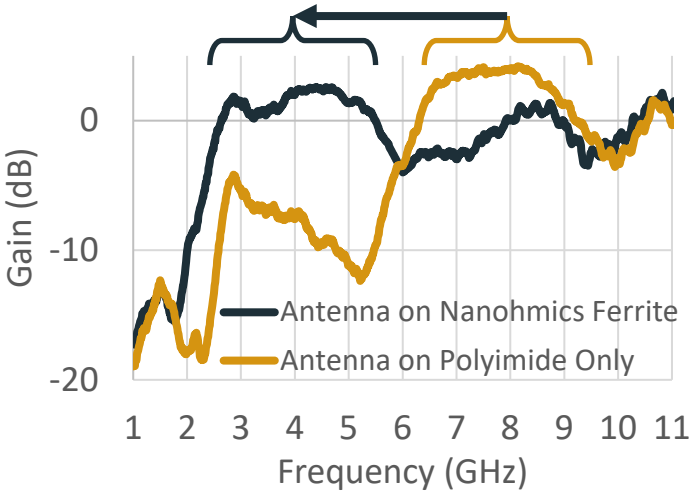
- 2x miniaturization of S-band components
- Compatible with flexible substrates (e.g., Polyimide)

Cross-section Illustration

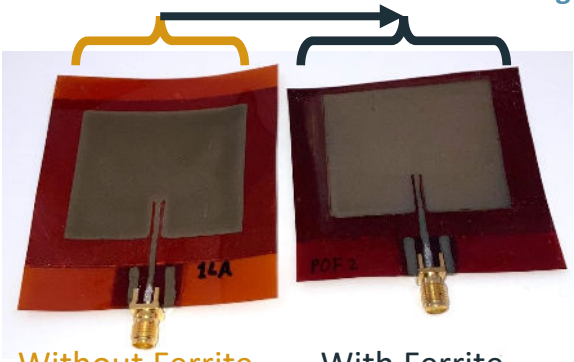


*For some substrates, a layer of water-based paint may assist as an adhesion promoter to the flexible substrate

Half the Frequency Means Double the Wavelength



Same Size Antenna With Double the Wavelength



APPLICATIONS/INDUSTRIES

- Printed microwave electronics
- WiFi and UHF band antennas
- Inductors
- Circulators
- Microwave Absorbers

Technical Point of Contact:
Dr. Andrew Foley, PI
afoley@nanohmics.com

Nanohmics, Inc.
6201 E Oltorf St
Austin, TX 78741

(512) 389-9990
info@nanohmics.com
www.nanohmics.com