Method for Determining the Dielectric Constant and Permittivity of Ceramic Micro- and Nanoparticles

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Ceramics have evolved far beyond the clay pots of their origin. Today, modern electronics depend on specialized ceramic materials that also have uses from mundane consumer products to mission-specific military applications.

Using the techniques in the techniques laid out by our researchers these patent filings and disclosures, it is now possible to accurately discern the dielectric constant and permittivity of ceramic micro- and nanoparticles.

Benefits of Technology

- Lower margins of error in dielectric constant estimation
- Method less susceptible to non-idealities caused by solids loading, sedimentation, or agglomeration

Potential Commercial Applications

These methods allow for high precision manufacturing of capacitor, microwave, packaging, multilayer, co-fire, thin film and high temperature dielectrics. They also are readily adaptable to the production of Bluetooth dielectric resonator antennae.

Further research into exotic ceramic materials with new characteristics will necessitate the use of techniques to accurately the dielectric constants and permittivity of their constituent particles. The patent, patent improvement and disclosure included in this offering will allow forward-looking materials manufacturers an opportunity to push their products into new and exotic market niches.

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IP Status

- Patent 7,821,269
- New Disclosure of improvements

Development Status

Tested and improved upon in the laboratory setting.