



Contribution ID: 463

Type: Oral

High voltage characteristics of novel 3-D printing techniques and materials

Thursday 22 June 2017 10:30 (15 minutes)

Recent progress in a variety of 3-D printing technologies that include various materials and much improved layer refinements have led to novel capabilities in rapid prototyping. NSWCCD has specifically incorporated this rapid prototyping ability for the design and testing of high voltage pulse power components that are relevant for high power radio frequency (HPRF) systems. Complex geometries that are non-conductive, have high breakdown strength, and hold high pressure is essential in high voltage pulse power designs. This paper will test and evaluate the high voltage properties of various Formlabs resins used in several HPRF projects. Testing and evaluation will include the measurement of dielectric constants using cavity loading techniques and determination of dielectric strengths while varying resins, print resolution, material thickness, and print orientations.

Authors: Mr CHEN, Yeong-Jer (NSWCDD); Mr SHANNON, John (NSWCDD)

Presenter: Mr SHANNON, John (NSWCDD)

Session Classification: Oral session 21 - High Voltage Techniques - Session Chair : Adrian Cross

Track Classification: High Power Microwaves, RF Sources and Antennas