

Fully Printed Conformal Antenna and Sensors on 3D Plastic, Ceramic, and Metallic Substrates

Speaker: Mike O'Reilly - Optomec Inc., Albuquerque, NM

E-mail: moreilly@optomec.com

Abstract

There is a growing demand for antennas and sensors directly integrated into products including smartphones, wearables, structural components, and IoT related products. Creating integrated 3D antenna and sensors using a direct write approach enables rapid product design and prototyping, reducing the number of manufacturing steps, while broadening the choice of substrate materials. Aerosol Jet® technology is used to print a wide variety of materials, including conductive and ceramic inks suitable for antenna and sensor creation. Material considerations will be discussed, and case studies involving broadband, Bluetooth, NFC antenna, plus strain and creep sensor comparisons between Aerosol Jet and traditional fabrication methods will be presented. Examples of via filling and wrap-around printing using five axis of motion manufacturing solutions will be discussed.