

3D Printed Electronics Functionalizing Smart Devices which are Empowering the Industrial Internet of Things

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Abstract

There are currently over 50 Billion connected industrial and mobile Smart Devices installed worldwide with annual growth predicted at >13 Billion new units per year. Connecting these devices together requires the widespread use of both sensors for data capture and antenna for communication of that data with systems and people that require access to it. Sensors are finding their way into every aspect of the industrial sector be it low cost medical diagnostic devices or high value components such as turbine blades. Printing sensors in 2D or 3D, directly onto these target products leveraging digitally driven sensor patterns enables mass customization and serialization. Similarly, the number of antenna finding their way into and onto mobile and land based devices that come in many shapes and sizes are increasing at a rapid rate. Lowering the costs associated with antenna manufacturing is a key industry driver market driver. Having the ability to print digitally created antenna on planar and non-planar low temperature substrates such as polycarbonate enables lower manufacturing and equipment costs and improved antenna design. This presentation will provide more details on Optomec's Aerosol Jet manufacturing solutions for 3D sensors and antennas directly printed on preformed structures which are key components within the Industrial Internet of Things.