

Method for rapid prototyping radio frequency microwave devices

Value Proposition

Traditional waveguides are composed of pure metals, which are pricey and heavy. Low-cost and low-cost waveguide and antennas are thus much desired, especially for mobile and aerospace applications.

Technology

Inventors at Duke developed a method for rapid manufacturing of waveguide components. Low-cost precision waveguide components can be fabricated by using high precision three-dimensional printing and plated with copper using both electroless plating and electroplating. The printed pyramidal antenna performed as well as industry-made antenna in near-field scanning.

Advantages

- Reduced cost and fabrication time
- Produces lightweight devices that can be customized for specific applications
- Performance is comparable with standard waveguides

Publications

- [Rapid prototyping lightweight millimeter wave antenna and waveguide with copper plating \(IEEE, 2015\)](#)

Duke

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Duke File (IDF)

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Inventor(s)

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Links

- [From the lab of Dr. Daniel Marks](#)



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