

# Flexible Hybrid Electronic Circuits for Microwave Frequency Applications

**Interactive Poster Presenter:** Jack P. Lombardi, Yilin Sung, Mohammed Alhendi

- Binghamton University, Binghamton, NY

**E-Mail:** [jlombar4@binghamton.edu](mailto:jlombar4@binghamton.edu)

## Abstract

With the advent of the internet of things and distributed sensor networks, printed and flexible hybrid electronics will be key to manufacturing these devices. This is due to the fact that these sensors must be non-obtrusive and cheap, driving the adoption of printed and flexible hybrid electronics, which hold the promise of conformal mounting to objects and using cheap polymer substrates. Microwave components and structures will be needed for these sensor modules. This is because these modules will be wireless, and will need microwave components and structures for communication, among other things. As these microwave components and structures will likely be fabricated in printed and flexible hybrid electronic technologies, they must be studied and tested to assess their performance. In this study, conventional (copper plated) and printed (using aerosol jet printing) microwave structures are fabricated and compared to show differences due to the different fabrication methods. Using these results, printed antennas and more advanced microwave structures, such as a Wilkinson divider, which incorporated dispensing as well as aerosol jet printing, are fabricated and analyzed.