

Abstract Submitted  
for the APR16 Meeting of  
The American Physical Society

**A Metamaterial-Inspired Approach to RF Energy Harvesting**

CLAYTON FOWLER, JIANGFENG ZHOU, University of South Florida — We demonstrate an RF energy harvesting rectenna design based on a metamaterial perfect absorber (MPA). With the embedded Schottky diodes, the rectenna converts captured RF energy to DC currents. The Fabry-Perot cavity resonance of the MPA greatly improves the amount of energy captured and hence improves the rectification efficiency. Furthermore, the FP resonance exhibits a high Q-factor and significantly increases the voltage across the Schottky diodes. This leads to a factor of 16 improvement of RF-DC conversion efficiency at ambient intensity level.

Clayton Fowler  
University of South Florida

Date submitted: 08 Jan 2016

Electronic form version 1.4