

### **Duke File (IDF) Number**

---

IDF #:T-004612

### **Meet the Inventors**

---

[Reynolds, Matthew](#)  
[Arnitz, Daniel](#)

### **Contact For More Info**

---

Koi, Bethany  
919-681-7552  
[bethany.koi@duke.edu](mailto:bethany.koi@duke.edu)

### **Department**

---

Electrical & Computer Engineering (ECE)

## **Real-time wireless power transfer control for passive backscattering devices**

---

A method and apparatus is disclosed herein for real-time wireless power transfer control. In one embodiment, a system comprises: an RF-energy harvesting sensor tag operable to generate a first backscatter signal and at least one base station operable to deliver RF power to the sensor tag by emitting a first waveform comprising a plurality of subcarriers, wherein the first backscatter signal is generated by the sensor tag by modulated scattering of the first waveform as incident upon the sensor tag, and further wherein the at least one base station subsequently emits a second waveform determined at least in part by a closed-loop feedback control algorithm responsive to measurements of the first backscatter signal.

Non-exclusive license only.

