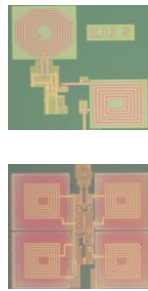# Research Project Opportunities
open for EE, CS, and CE students

The **Energy-Harvesting Active Networked Tags (EnHANTs) Project** is an *interdisciplinary* project in the Columbia EE and CS departments. EnHANTs will be small, flexible, and energetically self-reliant devices that can be attached to objects that are traditionally not networked (e.g., books, furniture, clothing). EnHANTs will provide the infrastructure for the future *Internet of Things*.

We are currently developing novel UWB (Ultra-Wide Band) radio chipsets that feature ultra-low power operation. The chipsets will be integrated into a testbed that will enable verifications of EnHANT-specific communication and networking protocols. Our research projects target students looking for challenging, hands-on, integrated system development experience.

EnHANTs is a large active project that involves several faculty and many students in various roles. Successful student projects have been showcased in numerous demonstrations and presentations at international conferences.

Professor Kinget's Group in the Columbia Integrated Systems Lab has openings for students who:

- have solid background on <u>analog and digital circuit</u> design. Experience with <u>FPGA development</u> or <u>PCB design and testing</u> is a plus. Experience with <u>RF measurement</u>, <u>antenna design</u> or <u>CMOS IC design</u> are highly desirable.

- are highly *self-motivated* and *driven*.

- are able to work both independently and in a large team.

- have superior communication skills.

Qualified BS or MS students can take the project for credit in ELEN E3998, ELEN E4998, ELEN E6001, COMS W4901 or COMS E6901

Interested? Send your resume to jz2382@columbia.edu

http://enhants.ee.columbia.edu