**Title: Lightweight Security Scheme for Internet of Things**

The compressive sensing method presents itself as a promising technique in many fields specially for the Internet of Things and Wireless sensor networks applications. That is because, the compressive sensing has the major advantage of performing lightweight encryption and compression simultaneously. It leads to secure the network in addition to prolong the network life time. However, chosen plaintext attacks and key distribution are still major challenges facing the compressive sensing method. This paper focuses on the compressive sensing method according to security issue, and propose an efficient lightweight security scheme that addressee the previous challenges. Moreover, we use experimental data collected from a real sensors located in Intel Berkeley Research Lab.