Highly Reliable **SRAM PUF**

The Problem

The huge amount of sensing devices found in future cars, homes, workplaces and cities require a much stricter security requirement for identification and authentication. However, when the variation is small, the logical value will be determined by noise, and can vary from run to run and the bit is unstable. The unstable bits can be masked by fusing or in the trusted environment and the algorithm can be implemented with the stable bits and error correction codes. However, the error correction code exposes some information to the outside world and is thus less secure.

The Solution

This cutting-edge technique improves the reliability of the SRAM PUF (Physical Uncloneable Function), by locating and disqualifying unreliable cells (using a method which we call Tilting). SRAM (Static random access memory).

The Commercial Benefit

Our novel technology reduces the need for error correction codes or even eliminates them and results in a more secure PUF. Our excellent invention not only makes codes more reliable and secure but also lowers their cost.

Market Potential

It is forecasted that Internet of Things market will reach $267B by 2020. By then, there will be 34 billion devices connected to the internet. IoT devices will account for 24 billion, while traditional computing devices will comprise 10 billion.

Target Markets/Industries

- Semiconductor market
- IC manufacturers

Intellectual Property

Patent Pending

Team: Primary Inventor

Prof. Joseph Shor
- Prof. Shor is presently an Associate Professor of Electrical Engineering at Bar Ilan University, and a Senior Member of the IEEE.
- Prof. Shor has published more than 60 papers in refereed Journals and Conference Proceedings in the areas of Analog Circuit Design and Device Physics.
- Prof. Joseph Shor holds > 40 issued patents and several pending patents.
- Prof. Shor was at Intel Corporation, as a Principal Engineer, and head of the Analog Team at Intel Yakum.

Future Research

It is planned to utilize this highly reliable PUF in security applications, such as key generation and encryption.

The Opportunity

We invite investors to license our patent through a licensing agreement or through sponsored research.

Keywords

- PUF,
- SRAM,
- Secret Key generation,
- Encryption,
- IoT
- Physical Uncloneable Function