Physiological Information Leakage: A New Front on Health Information Security

Challenge:

Implantable medical devices (IMDs) need a secure communication protocol

Security vs. Safety
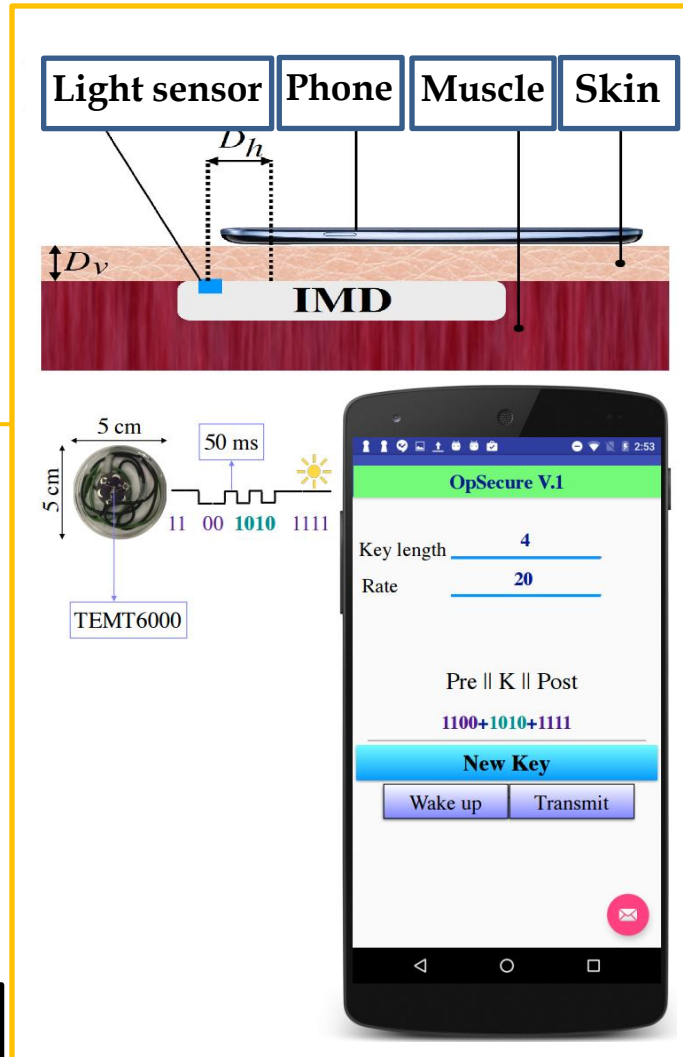
Resilient against attacks	Easily accessible in emergencies

Solution:

A *one-way* optical communication channel (OpSecure) for:

❖ sending the encryption key to the IMD

❖ waking up the IMD

Using encrypted RF channel for *two-way* communication

Scientific Impact:

OpSecure makes IMDs:

❖ resilient against eavesdropping

❖ resilient against remote battery draining

Broader Impact:

OpSecure:

❖ Ultra low-energy

❖ Minimal size overhead

Therefore, it:

❖ can be easily added to future IMDs

❖ can provide a practical solution to prevent attacks