Low Power System Design
Hardware Related Security and Trust

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Low Power and Energy Efficient System Design and Prototype

Scope of work and key ideas:
• System level: cut off unnecessary service, resource management.
• Circuit level: new technologies to reduce leakage (dual Vt, temperature issues).
• New energy source: energy harvesting.

Applications:
embedded systems, portable devices, real time systems, sensor network, etc.

Goal and impact:
• Enhance system security with hardware components.
• Ensure system/chip is trustable, or does exactly what it is designed for.
• Improve reliability of system/chip.

Approaches:
• Utilize hardware features (e.g. PUF) for security.
• Study basic computation models (e.g. graph, Boolean satisfiability).
• Design practical techniques at all design levels.
• Hardware prototype/implementation of security primitives.

Applications:
embedded systems, portable devices, real time systems, sensor network, etc.

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