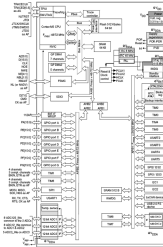
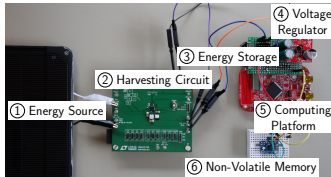


- *Scenario*: energy-constrained **TCP/IP-communication**
- *Hardware*: WiFi module ESP8266 (cost: 2 \$, Internet of Things)
- *Tasks*:
 1. Make Sming¹ framework energy-aware
 2. Integrate TCP/IP stack into operating-system kernel
- *Goal*: schedule communication under **hard energy constraints**
- *Supervisors*: Peter W., Heiko

¹github.com/SmingHub/Sming

Exploiting DMA Controllers for Hardware-Based Scheduling



- **Scenario: feature-rich DMA controllers** in modern microcontrollers
- *DMA controllers considered turing-complete* [Rushanan, WOOT '15]
- *Hardware: NXP KL46z development board (ARM Cortex-M0+)*
- *Tasks:*
 1. Identify potential/interaction patterns: write “DMA programs”
 2. Measure benefits in energy-consumption
- *Goal: exploit DMA for energy-efficient **hardware-based scheduling***
- *Supervisors: Heiko, Peter W.*

