

## Silicon technology offers:

- Abundant material
- Enabling technology
- Economy of scale
- Miniaturisation
- High density features
- Integration of components

**Non-electrical appliances**

**Small size**

**High number/difficult servicing**

**Top-down**

**Bottom-up**

**THERMOELECTRICS**

3D microstructures & Si NWs

**AUTONOMOUS SENSOR NODES**

e.g.  
Tire pressure monitoring  
Status monitoring  
Predictive maintenance

**MECHANICAL HARVESTING**

3D microstructures & Electrostatic vs Piezoelectric

**Electrostatic**

**Piezoelectric**

**Solid State thin film planar microbattery**

low capacity high power

high capacity high power

**3D**

Conformal coatings / Solid state post-lithiation

**STORAGE**

Thin film materials & 3D integration

**Goal**  
Replace primary batteries with harvesters and secondary batteries

**Title:** Silicon Friendly Materials and Device solutions for Microenergy Applications

**Acronym:** SiENERGY

**Call/topic:** NMP.2013.2.2.4 Materials solutions for durable energy harvesters

**Duration:** 36 months (starting 1-11-2014)

**Funding:** 3,794,913.00€ (4.824.460.00€)

**Partners:** 9 (4 countries) - coordinated by CNM-CSIC

**Website:** www.sinergy-project.eu

