

# Skeleton

## Question oriented arrangement

- **NOT** an innovative paper with a big novel idea
- **BUT** a general and systematic consideration of HOW to design

Solar Energy Harvesting (SEH)

Wireless Embedded System

- What is **SEH**? Everything about SEH
- How SEH affects the management of our **Wireless Embedded System** ?
- *Seeing is believing* - a vivid **demo** of the above consideration

# Solar Energy Harvesting

## What is SEH

- Pretty simple: draw energy from the sunshine to power our devices

- Its peers:

Harvesting technology	Power density
Solar cells (outdoors at noon)	$15mW/cm^2$
Piezoelectric (shoe inserts)	$330\mu W/cm^3$
Vibration (small microwave oven)	$116\mu W/cm^3$
Thermoelectric ( $10^\circ C$ gradient)	$40\mu W/cm^3$
Acoustic noise (100dB)	$960nW/cm^3$

The highest  
power density



Idea source  
For powering  
An embedded system  
With a smaller harvesting size