1. Technology Overview

- Infrared sensors can see light in a wavelength range from 8 to 12 mm, which is undetectable to the human eye. Although high-performance infrared focal plane arrays (IRFPAs) have already been deployed in various fields, they cannot accommodate large new markets between the existing high-end and low-end markets. Many infrared applications don't need complete image information, but only use specific information extracted from images, such as position, motion, and area of hot (or cold) objects. The new markets include such non-imaging applications that require infrared array sensors based on different concepts from the conventional imaging IRFPAs. **IRPSD** is a new infrared array sensor for obtaining some useful information as analog outputs without digital signal processing. By arranging two thermometers in a pixel and connecting them in rows and columns, **IRPSD** enables position detection, flow-line tracking, and number counting for hot (or cold) objects. Analog signal processing functions and useful responsivity for human detection applications have been confirmed with a prototype **IRPSD**.

2. Benefits

- The simple architecture and DSP-less operation of **IRPSD** offer powerful low-cost solutions for consumer infrared sensor systems. Sensor systems using the infrared spectral band successfully work at any time day or night.

3. Market Potential / Applications

- **IRPSDs** are useful for a wide variety of applications in security, process monitoring, health monitoring, safety and environmental markets.

4. Keywords

- Infrared sensor, thermal infrared detector, array sensor, analog signal processing, thermopile

5. Patent status & Patent owner contact

- Patent license is available.
  Patent owner contact: Hisahiro MORIUUCHI (JST)
  Tel:+81-3-5214-8486
  e-mail: license@jst.go.jp