LICENSING OPPORTUNITY: THE NIST RADIOMETER

DESCRIPTION

Invention

This advanced radiometer is composed of a substrate, a radiation absorber placed on the substrate to absorb radiation, a thermal component placed on the substrate to change electrical resistance in response to a change in temperature of the radiometer, and a thermal link to connect the radiometer to a thermal reference. The NIST radiometer is designed to absorb approximately 100% incident optical power using vertically aligned carbon nanotubes - the ideal absorber - to accurately measure optical power.

BENEFITS

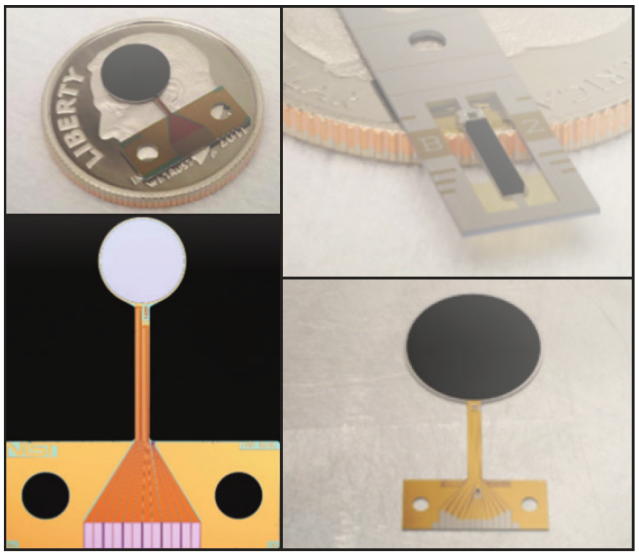
Potential Commercial Applications

- Wide variety of usages, including optical power meters
- Useful in an imaging array, a broadband (multispectral) sensor, or a multi-element trap readiometer
- Is a thermal detector for optical radiation, including infrared radiation
- Can be electrically connected or optically connected to various devices

Competitive Advantage

Can give accurate measurements with the following benefits:

- Non-bulky and does not require many individual components to craft
- Is optimal for detecting transient optical signatures
- Is not limited to reading conical surfaces



Clockwise from upper left: bolometer for optical fiber power measurement operates at 4K, bolometer for space-based measurement of solar spectral irradiance, operates at room temperature; bolometer for continuous wave, visible/near infrared laser power measurement, operates at room temperature; bolometer for fast far infrared power calibration, operates at 4K.

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