

# Miniaturized Thermoelectric Radiation Sensors

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The sensitivity of radiation thermopiles fabricated by means of thin film technology and micromachining is studied theoretically and compared with experimental results. The paper discusses the influence of gas filling and package design on sensitivity. Design of thermoelectric radiation microsensors is described.

## 1. Introduction

Thermal detectors are widely used for infrared detection. They operate at room temperature, respond to a wide spectral range of radiation, and are inexpensive. The present widespread interest in miniaturized and at the same time highly sensitive or fast responding thermal detectors has led to the development of thermoelectric microsensors. Design and function of miniaturized thermopiles with circular structure have been described in previous papers.<sup>(1-3)</sup> This paper is based on a poster presented at the Conference EUROSENSORS IV, Karlsruhe, Germany 1990,<sup>(4)</sup> and includes more technological details and an extension to rectangular thermopile geometry.

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