

## Indoor Air Quality Sensing And Alert/Alarm System

Patent Pending U.S. #11/809,716

**summary...** Detects airborne chemical and biological agents using coated thermopile heat sensors.

**description...** These **thermopile temperature sensors** have chemical or biological coatings that react with **air pollutants of concern** inside buildings or structures. Tests with ammonia vapor have demonstrated proof of the concept. Current development is directed at various **gas-phase air pollutants and airborne bioaerosols**. Sensors of this type, most likely assembled in arrays of several sensors, are likely to be useful in various industrial, environmental, and homeland security applications.



This photo shows an array of 3 thermopile sensors (3X actual size). The one on the right is coated with a material that senses ammonia vapor. Coatings for other vapors are under development.

**market significance...** Detecting airborne chemical and biological agents inside structures is an ongoing challenge for homeland security personnel **monitoring potential terrorist threats** and for building managers watching routine emissions. Information from these sensors could alert building managers to initiate emergency procedures such as changing operation of the building ventilation system or advising occupants to take protective action. The invention is designed to be a low-cost solution.

**stage...** Working model detecting ammonia can be demonstrated at our research laboratories.

**keywords...** thermopile heat sensors, detect airborne chemical and biological agents, chemical-coated sensor



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