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[54] **TEMPERATURE-CONTROLLED, MICROMACHINED ARRAYS FOR CHEMICAL SENSOR FABRICATION AND OPERATION**

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[58] **Field of Search** 338/34, 35, 307, 25; 257/253, 252; 73/31.05, 31.06; 422/98, 90; 436/149, 113, 150, 151; 437/918, 248, 60

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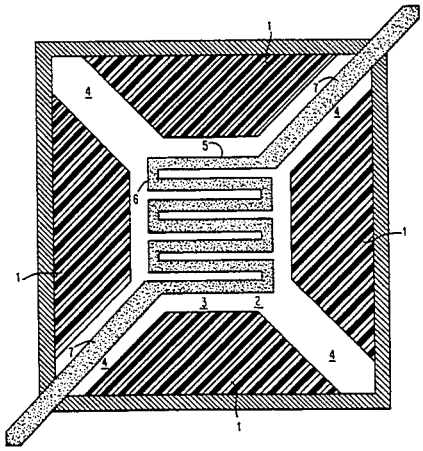
[57] **ABSTRACT**

Planar forms of chemically-sensitive materials have been combined, under temperature control, with the pixels of a specially-designed micro-hotplate array to produce a miniature device capable of analyzing chemical mixtures. The device uses integrated multiple elements having different adsorption properties and temperatures to collectively achieve chemical selectivity in sensing. The method of making and using selectively in sensing. The device of the present invention is manufactured by standard CMOS foundry techniques which allow the production of a range of devices that have improved sensing performance.

28 Claims, 7 Drawing Sheets