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Mitov

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(54) **FILLED HOTWIRE ELEMENTS AND SENSORS FOR THERMAL CONDUCTIVITY DETECTORS**

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(30) **Foreign Application Priority Data**

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(52) **U.S. Cl.** **374/44**; 374/29; 73/25.03; 73/75; 436/149

(57) **ABSTRACT**

(58) **Field of Classification Search** 374/29, 374/100, 43, 44, 45, 137, 30–31, 35, 37, 374/208, 4, 5; 338/22 R, 28, 25; 436/149; 422/51

Hotwire element for thermal conductivity detectors, that comprises one or two individual nickel filaments each having resistance of above 200 ohm at 20° C. and an insulation coating of polytetrafluoroethylene with a thickness less than 5 micrometers, that are wound into a uniformly filled spherical or cylindrical body that has at least 33% gas-permeable hollow volume. Relevant hotwire sensor for thermal conductivity detectors, that comprises a wound on a centering holder filled element enveloped by fixed fillers forming a symmetric to it built-in cavity with an inlet and a gas outlet surrounding the centering holder. Radii of the filled elements and their cavities are in proportion, at which minimum electric current is needed for heating the elements to desired temperature.

See application file for complete search history.

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4 Claims, 4 Drawing Sheets

