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Lussey et al.

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(54) **ANALYTICAL DEVICE**
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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 382 days.

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Nickel Powder Type 287, "A filamentary powder with a characteristic three-dimensional chain-like network of very spiky beads".

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(57) **ABSTRACT**

A sensor for chemical species or biological species or radiation presenting to test fluid a polymer composition comprises polymer and conductive filler metal, alloy or reduced metal oxide and having a first level of electrical conductance when quiescent and being convertible to a second level of conductance by change of stress applied by stretching or compression or electric field, in which the polymer composition is characterized by at least one of the features in the form of particles at least 90% w/w held on a 100 mesh sieve; and/or comprising a permeable body extending across a channel of fluid flow; and/or affording in-and-out diffusion of test fluid and/or mechanically coupled to a workpiece of polymer swellable by a constituent of test fluid.

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H01B 1/00 (2006.01)
H01C 8/00 (2006.01)
H01C 10/14 (2006.01)

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(58) **Field of Classification Search** **252/512; 338/34, 224; 73/53.01; 204/422, 228.1**

See application file for complete search history.

7 Claims, 16 Drawing Sheets

