US006492014B1

(12) **United States Patent**
Rolison et al.

(10) **Patent No.: US 6,492,014 B1**
(45) **Date of Patent: Dec. 10, 2002**

(54) **MESOPOROUS COMPOSITE GELS AN AEROGELS**

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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 0 days.

(21) Appl. No.: **09/541,024**

(22) Filed: **Mar. 31, 2000**

Related U.S. Application Data

(60) Provisional application No. 60/132,746, filed on Apr. 1, 1999.

(51) **Int. Cl.**[7] **B01J 21/08**; B01J 13/00; B32B 5/22; C01B 33/16

(52) **U.S. Cl.** **428/317.9**; 423/338; 501/12; 502/79; 502/233; 502/243; 516/100; 516/111

(58) **Field of Search** 516/100, 111; 501/12; 423/338; 502/233, 243, 79; 428/317.9

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(57) **ABSTRACT**

A composite gel or aerogel is formed by commingling a particulate guest (such as a colloidal or dispersed (i.e., non-colloidal) solid or a powder) with a sol which is either about to gel or in which gelation has just started. After addition of the particulate, the mixture is then permitted to gel into a solid, gelled composite with open pores. This solid, gelled composite is then dried in a manner that prevents the collapse of open pores within the solid, gelled composite in which the gel acts as a "nanoglue" that holds the particles together.

23 Claims, No Drawings