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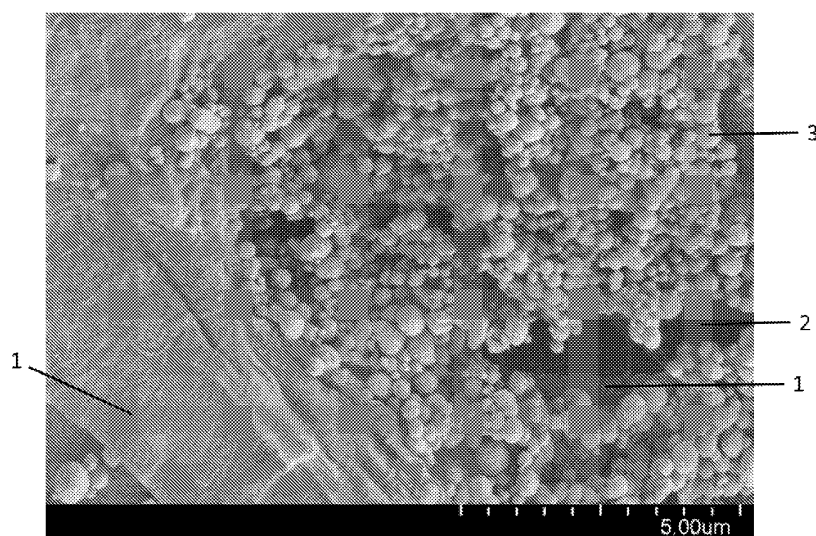


FIG. 1

(57) Abstract: The use of a sol comprising a solvent, an alkoxide and a catalyst to prepare a water impermeable product is provided. Also provided is a water impermeable fibre-based product prepared using a sol. Further provided is a sol comprising a solvent, an alkoxide, a biopolymer, and a catalyst. A method of making a sol comprising a solvent, an alkoxide, a biopolymer, and a catalyst is also provided. The method comprises: a) dispersing a biopolymer in a solution comprising a catalyst and then adding an alkoxide; b) dispersing an alkoxide in a solvent, adding a catalyst and then adding a biopolymer; or c) dispersing an alkoxide in a solution comprising a catalyst and then adding a biopolymer. Yet further provided is a coated product wherein the product has been coated with a sol comprising a solvent, an alkoxide, a biopolymer, and a catalyst. A powder derived from a sol as described herein is also disclosed.

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