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(54) Title: METHOD FOR TREATING SURFACES CONTAINING SI-H GROUPS

(57) **Abstract:** The present invention relates to method for treating a substrate or a surface thereof bearing Si-H groups to confer to it a physical and/or biochemical surface-modified property, wherein it comprises at least a step consisting of exposing, within a liquid medium, said substrate or a surface thereof with at least a polymer, said polymer containing: at least three reactive sites able to attach to said substrate or said surface by reacting with Si-H groups and further creating covalent bonds, and at least a molecule or a part thereof able to confer said modified property to said substrate or said surface thereof, said step being carried out in efficient conditions to promote the covalent grafting of said polymer to said substrate or surface thereof and the molecular weight of said polymer being greater than 1000 g/mol.

AMENDED CLAIMS

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polysarcosine, polyvinylpyrrolidone, polyaniline, polypyrrole, polythiophene, aminopenicillanic acid, quaternary ammonium groups, quaternary phosphonium groups guanidinium groups, imidazolium groups and sulfonium groups.

11. The method according to anyone of the preceding claims, wherein it is

5 followed by a curing step.

12. The method according to anyone of the preceding claims, wherein the liquid medium is an aqueous medium.

13. The method according to anyone of the preceding claims, wherein the substrate or surface thereof bearing Si-H groups is a silicone substrate or a hydrogen-10 terminated silicon substrate.

14. A polymer containing:

- at least three reactive sites able to attach to a substrate or said surface bearing Si-H groups by reacting with said Si-H groups and further creating covalent bonds, and

15 - at least a molecule or a part thereof able to confer a physical and/or biochemical modified property to said substrate or said surface thereof, the molecular weight of said polymer being greater than 1 000 g/mol.

16. A copolymer containing at least a monomer unit of type A including at least a reactive site able to attach to a substrate or said surface bearing Si-H groups by reacting with said Si-H groups and further creating covalent bonds and at least a monomer unit of type B including at least a molecule or a part thereof able to confer a physical and/or biochemical modified property to said substrate or said surface thereof, the molecular weight of said copolymer being greater than 1 000 g/mol.

17. A composition for treating a substrate or a surface thereof bearing Si-H groups, wherein it comprises, in a liquid medium, a polymer or a copolymer according to claim 14 or 15.

18. A substrate bearing Si-H groups that has been provided on its surface with a modified physical and/or biochemical property, obtainable by a method according to anyone of claim 1 to 13.

19. A medical device comprising a substrate according to the preceding claim, wherein said substrate is a silicone substrate.

19. A preparation process of a copolymer according to claim 15, wherein a starting homopolymer comprising at least two reactive sites is reacted at least with:

- a reagent that by reacting with at least one reactive site gives rise to a copolymer containing a reactive site able to attach to a substrate or a surface thereof bearing Si-H groups by reacting with said Si-H groups and further creating covalent bonds and/or
 - with another reagent that by reacting with at least one reactive site gives rise to a copolymer able to confer a modified physical and/or biochemical property to said substrate or a surface thereof.