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(54) **A METHOD FOR LIGHT-INDUCED ACTUATION OF PH-SENSITIVE ASSEMBLIES AND A COMPOSITE MATERIAL THEREFORE**

(57) The invention relates to a method for light-induced actuation of pH-sensitive assemblies as well as to a composite material suitable therefore.

The claimed composite material comprises at least one photoactive inorganic material and at least one organic material and has at least one inorganic/organic interface, wherein the photoactive inorganic material is capable, after exposure to electromagnetic irradiation, to induce local pH changes, in particular a defined pH gradient, in the organic material and/or composite material which cause a change of a structural property of the organic material and/or the composite material.

The claimed method for light-induced actuation of pH-sensitive assemblies involves exposing said composite material to electromagnetic irradiation, in particular a focused or localized irradiation, causing local pH changes in the composite material which in turn cause a change of a structural property of the composite material or the organic material thereof.

The structural property to be changed may be any physical, in particular mechanical, topological or chemical property, of said composite material and/or organic material.

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