

Title (en)
COMPOSITE CAPABLE OF RAPID VOLUME CHANGE

Title (de)
VERBUNDWERKSTOFF MIT DER FÄHIGKEIT ZUR SCHNELLEN VOLUMENÄNDERUNGEN

Title (fr)
COMPOSITE CAPABLE DE CHANGER RAPIDEMENT DE VOLUME

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Application
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Abstract (en)
[origin: EP1026192A1] The present invention relates to a novel composite capable of rapid volume change, the use of said composite as well as an actuator comprising the composite. Thus, the invention relates to a composite comprising one conjugated polymer capable of changing redox-potential upon the onset of an electrical or chemical stimulus, and an ion-sensitive gel capable of changing volume, the polymer and the gel being morphologically interrelated, and wherein the volume change of the gel is in response to the change of the redox-potential of the conjugated polymer, and 50 % of the total volume change of the composite is achieved within a period of at most 5 minutes from the onset of the stimulus to the conjugated polymer. The composite is capable of rapid volume change, may for example be used in an actuator in which the composite is controllable by electrical and/or chemical stimuli, and the strength of the composite is important. Further the invention relates to the use of a composite for the production of an actuator and an actuator comprising a composite as well as a process of causing a volume change in a composite comprising a conjugated polymer capable of changing redox-potential and an ion-sensitive gel capable of changing volume.

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Citation (search report)
See references of WO 0046278A1

Citation (examination)

- XP000944418
- CHIARELLI P, KAYO UMEZAWA, ROSSI DE D: "A POLYMER COMPOSITE SHOWING ELECTROCONTRACTILE RESPONSE", POLYMER GELS, PLENUM PRESS, NEW YORK, NY,, US, 1 January 1991 (1991-01-01), US, pages 195 - 203, XP000944418

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