

PROCESS FOR PRODUCING A COMPOSITE MATERIAL

ABSTRACT

The present invention relates to a process for producing a composite material composed of a) at least one oxidic phase and b) an organic polymer phase, comprising the copolymerization of at least one compound which is described by the following general formula I $[(ArO)_mMO_nR_rH_p]_q(I)$ in which M is B, Al, Ga, In, Si, Ge, Sn, P, As or Sb, m is 1, 2 or 3, n is 0 or 1, r is 0, 1 or 2, p is 1, 2 or 3, q is 1 or an integer > 1, for example an integer from 2 to 20, especially an integer from 3 to 6, $m + 2n + r + p$ is 1, 2, 3, 4 or 5 and corresponds to the valency of M, Ar is phenyl or naphthyl, where the phenyl ring or the naphthyl ring is unsubstituted or may have one or more, for example 1, 2 or 3, substituents selected from independently alkyl, cycloalkyl, alkoxy, cycloalkoxy and NR^aR^b in which R^a and R^b are each independently hydrogen, alkyl or cycloalkyl, R is alkyl, alkenyl, cycloalkyl or aryl, where aryl is unsubstituted or may have one or more substituents selected independently from alkyl, cycloalkyl, alkoxy, cycloalkoxy and NR^aR^b in which R^a and R^b are each as defined above, with at least one compound selected from formaldehyde and formaldehyde equivalents, in a reaction medium which is essentially anhydrous, to obtain a composite material having an arrangement of phase domains similar to those nanocomposite materials obtainable by twin polymerization as described in the prior art, and to the use of the composite material for production of gas storage materials, rubber mixtures, low-K dielectrics and electrode materials for lithium ion batteries.

(no suitable figure)