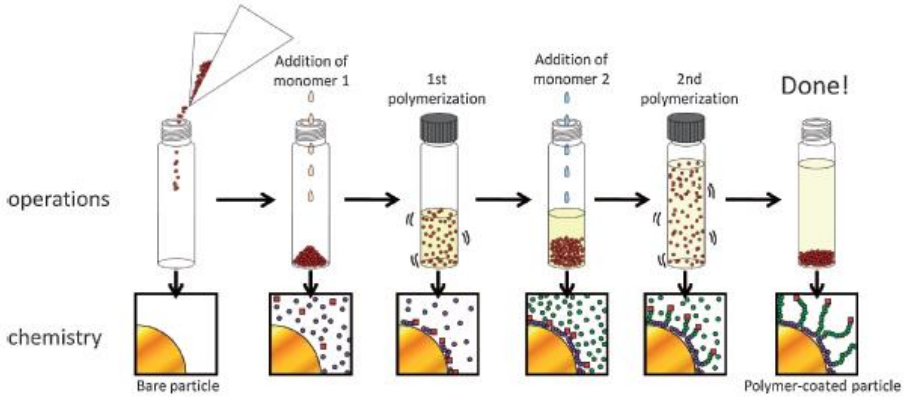
Tohoku Univ. Technology

Inorganic-organic hybrid material

Available mass produced by a simple method without using a modifier

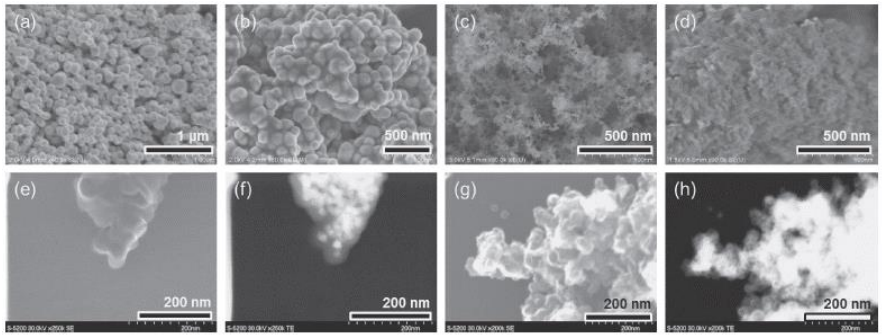


Overview

Most of the methods for synthesizing polymer modified inorganic nanoparticle (PMIN) is method using modifier, which is expensive and unsuitable for mass production. This technology related to PMIN synthesized by Sequential living radical copolymerization of two kinds of monomers on surface of hydrophilic inorganic nanoparticle.

[Effect]
- PMIN can be mass produced easily and inexpensively.
- Since no modifier is used, PMIN does not contain an impurity derived from a modifier and can sufficiently exhibit the inherent physical properties and functions.

PMINs synthesize by this technology



(a)BaTiO3 (b)BaTiO3@PHEA-b-PS (c)TiN (d)TiN@PHEA-b-PS
(e)SiO2 (f)SiO2@PHEA-b-PS (g)£-Fe2O3 (h)£-Fe2O3@PHEA-b-PS

Product Application

- Filler in plastic
- Material for high proton conductivity electrolyte membrane
- Material for water electrolysis membrane

Related Works

[1] Chem. Lett. 2013, 42, 801-803

IP Data

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