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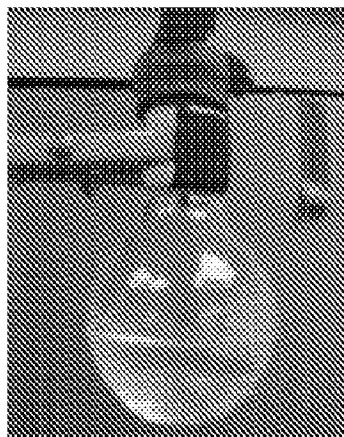
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[Continued on next page]

(54) Title: MONODISPERSED ORGANIC MONOLAYER COATED CALCIUM-CONTAINING NANOPARTICLES

FIGURE 1



(57) Abstract: A method for the synthesis of monodispersed, organic-monolayer coated, calcium-containing nanoparticles is presented. A biphasic liquid system comprises an aqueous phase of bare particles and an organic phase containing organic molecules with carboxylic acid end group is mixed. The carboxylic acid group binds to the surface of the calcium-containing particles and the particles are coated with a monolayer of organic molecules. The exposed surface of the coated particles is more hydrophobic than the surface of the bare particle and the particles are extracted to the organic phase. The process changes the geometry of the particles and decreases the size distribution in a population of particles.



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**A. CLASSIFICATION OF SUBJECT MATTER****B82B 1/00(2006.01)i, B82B 3/00(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS (KIPO Internal)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	DIHAYATI, Y. et al. Encapsulation Method for CaCO <sub>3</sub> Nanoparticles. Journal of Applied Sciences. 2007, Vol. 7, pages 2046-2050.	43-48, 50
Y	OSMAN, M. A. et al. Surface Treatment of Calcite with Fatty Acids: Structure and Properties of the Organic Monolayer. Chemistry of Materials. OCTOBER 2002, Vol. 14, pages 4408-4415.	43-48, 50
A	WEI, G. et al. Aqueous-Organic Phase Transfer of Gold Nanoparticles and Gold Nanorods Using an Ionic Liquid. Journal of the American Chemical Society. 28 APRIL 2004, Vol. 126, pages 5036-5037.	1-50
A	KUMAR, A. et al. Phase transfer of silver nanoparticles from aqueous to organic solutions using fatty amine molecules. Journal of colloid and interface science 15 AUGUST 2003, Vol. 264, pages 396-401.	1-50

 Further documents are listed in the continuation of Box C. See patent family annex.

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