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(71) Applicant *(for all designated States except US)*: **YONSEI UNIVERSITY** [KR/KR]; 134, Sinchon-dong, Seodaemun-gu, Seoul 120-749 (KR).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **CHEON, Jin-Woo** [KR/KR]; #213-803, Mokdong-2cha Wooseong Apt., Sinjeong 7-dong, Yangcheon-gu, Seoul 158-050 (KR). **JUN, Young-Wook** [KR/KR]; #1493-1, Seongseok-dong, Ilsan-gu, Goyang-si, Gyeonggi-do 411-570 (KR). **CHOI, Jin-Sil** [KR/KR]; #102-905, Cheongku-Bluevil, Yongsan-dong, Dalseo-gu, Daegu 704-130 (KR).

(74) Agents: **LEE, Sei-Jin** et al.; 17th Floor, City Air Tower, 159-9 Samsung-dong, Gangnam-gu, Seoul 135-973 (KR).

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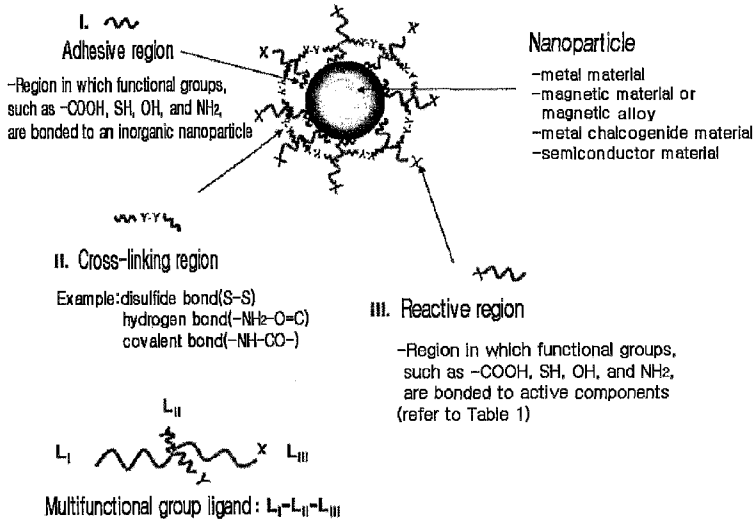
(54) Title: WATER-SOLUBLE NANOPARTICLES STABILIZED WITH MULTI-FUNCTIONAL GROUP LIGANDS AND METHOD OF PREAPATION THEREOF



(57) Abstract: Disclosed are water-soluble nanoparticles. The water-soluble nanoparticles are each surrounded by a multifunctional group ligand including an adhesive region, a cross linking region, and a reactive region. In the water-soluble nanoparticles, the cross-linking region of the multifunctional group ligand is cross-linked with another cross-linking region of a neighboring multifunctional group ligand. Furthermore, the present invention provides a method of producing water-soluble nanoparticles, which includes (1) synthesizing water-insoluble nanoparticles in an organic solvent, (2) dissolving the water insoluble nanoparticles in a first solvent and dissolving water-soluble multifunctional group ligands in a second solvent, (3) mixing the two solutions from the step (2) to substitute surfaces of the water-insoluble nanoparticles with the multifunctional group ligands and dissolving a mixture in an aqueous solution to conduct a separation process, and (4) cross-linking the substituted multifunctional group ligands with each other.

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