

Preparation of Sunscreen Capsules Using Photoreactive Polymers Possessing Natural Compounds

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Sunlight contains harmful ultraviolet light. Sunscreen materials are great important materials for skin protection from sunlight. Herein, hollow/capsule polymer particles possessing ultraviolet absorbance capability were fabricated by the interfacial photoreaction of spherical polymer particles possessing photoreactive cinnamoyl and coumarin groups. In the interfacial photocrosslinking approach, [2+2] photodimerization reaction between two cinnamoyl and coumarin groups proceeds under suitable wavelength lights, but the photodimerization reaction only proceeds at the particle interfacial region. Using this interfacial photocrosslinking approach, shell-crosslinked hollow polymer particles were obtained directly from simple spherical polymer particles via a facile procedure. Encapsulation of various molecules in the hollow polymer particles was achieved by post-introduction based on the solvent exchange procedure.