Institut Européen de Chimie et Biologie

I E C B

Supramolecular gel-functionalized polymer composite for optical use.

Hirotaka IHARA
Department of Applied Chemistry and Biochemistry, Graduate School of Science and Technology, Kumamoto University, JAPAN

We propose a new strategic method to create a transparent and functional polymer film, which is based on the nano-fibrillar phase separation of low molecular self-assembling compounds in polymer, and therefore the resultant aggregates in polymer are enough small to keep the transparency but also show supramolecular functions through molecular orientation. In this paper, we demonstrate on the molecular design of photo-functional supramolecular gel-forming compounds, unique optical behaviors such as high Stokes shift, strong exciton coupling and circularly polarized luminescence in the supramolecular gel-polymer composite system, and some applications as a spectral conversion film for improvement of power conversion efficiency in solar cells.