

Influence of molecular assembly structures in conjugated polymer for photothermal property.

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Recently, conjugated polymers had gradually admitted as a promising material in various applications. Their versatile characteristics such as high fluorescence brightness, high photostability, and low cytotoxicity have transformed them to alternatively multifunctional biomaterials. However, many of these organic-based materials were limited by lack of hydrophilicity and thereby poor bioavailability. This obstacle can be overcome by the formulation of conjugated polymer nanoparticles (CPNs) incorporating functionalized polyethylene glycol (PEG) in an aqueous medium. This research provides a view of different techniques in the fabrication of PEGlated CPNs formed from the phase-separated thin film [1] in the incorporation of a donor-acceptor polymer and a phospholipid. The difference in PEG-linked methods results in the changing of assembled molecular structures, thus giving the significant effect on the near infrared absorption and photothermal properties for theragnostic applications.