1. Record Nr. UNINA9910688589103321 Polymer Micelles / / edited by Shin-ichi Yusa [and three others] Titolo Basel: .: MDPI - Multidisciplinary Digital Publishing Institute. . 2018 Pubbl/distr/stampa **ISBN** 3-03842-808-6 Descrizione fisica 1 online resource (vii, 209 pages) Disciplina 668.9 Soggetti Polymers Micelles Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Sommario/riassunto Classically, polymer micelles have been defined as aggregates formed by the self-association of amphiphilic polymers due to the hydrophobic interactions between polymer molecules in water. Practical applications of polymer micelles include as carriers in drug delivery systems, as solubilizers, and as associative thickeners. Polymer micelles that do not fall within the classical definition have recently been reported and reflect important developments in synthesis and analysis. For example, hydrophobic interactions are the classic force driving polymer association, whereas recently, micelles have been formed through

by the self-association of amphiphilic polymers due to the hydrophobic interactions between polymer molecules in water. Practical applications of polymer micelles include as carriers in drug delivery systems, as solubilizers, and as associative thickeners. Polymer micelles that do not fall within the classical definition have recently been reported and reflect important developments in synthesis and analysis. For example, hydrophobic interactions are the classic force driving polymer association, whereas recently, micelles have been formed through interactions such as electrostatics, hydrogen bonds, and coordination bonds. Intermolecular association results in the formation of polymer micelles that are similar to micelles formed from low molecular weight surfactants, whereas unimolecular micelles formed by intramolecular association within a single polymer chain have also been reported, as have stimuli-responsive polymer micelles. It is therefore important to constantly update the information available and our knowledge of polymer micelles. This special issue covers synthesis, characterization, solution properties, association behavior, simulation, and the application of polymer micelles and polymer aggregates. The aim of this issue is to expand our knowledge of polymer micelles by gathering together the latest basic and applied information regarding these supramolecular structures.