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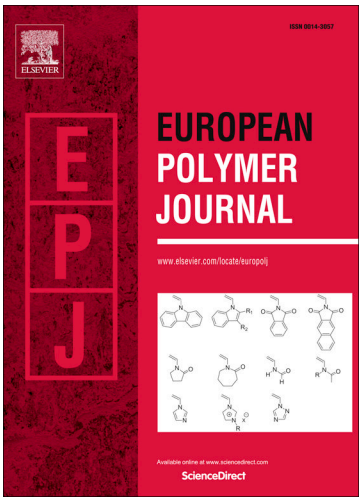

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Impact and Amplification of Chirality in the Aggregation of Leucine-Appended Poly(*p*-phenylene ethynylene) (PPE)

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Abstract

A leucine-appended poly(*p*-phenyleneethynylene) (PPE) was prepared in enantiomeric stereoregular (L-**1** and D-**1**) and stereorandom (rac-**1**) forms. The solution aggregates of L-**1**, D-**1**, rac-**1**, and mixtures of L-**1**/D-**1**, were characterized by absorption, electronic circular dichroism and emission spectra. Both rac-**1** and L-**1**/D-**1** mixtures are more prone to aggregate than L-**1** and D-**1**. Upon aggregating, the enantiomeric mixtures manifest an apparent majority-rules effect, which is mostly due to the greater tendency to form heterochiral aggregates with respect to homochiral ones. The impact of chirality on the aggregation behaviour of the aminoacid-appended PPE is demonstrated.

Keywords: conjugated polymers; chiral polymers; electronic circular dichroism; fluorescence quenching; supramolecular structure