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Title:	Folding of aromatic polyamides into a rare intrachain β -sheet type structure and further reinforcement of the secondary structure through host-guest interactions
Authors:	Samanta, Subhendu (/jspui/browse?type=author&value=Samanta%2C+Subhendu) Mallick, Dibyendu (/jspui/browse?type=author&value=Mallick%2C+Dibyendu) Roy, Raj Kumar (/jspui/browse?type=author&value=Roy%2C+Raj+Kumar)
Keywords:	Aromatic polyamides Intrachain β -sheet
Issue Date:	2022
Publisher:	Royal Society of Chemistry
Citation:	Polymer Chemistry, 13(22), 3284-3293
Abstract:	Aromatic oligoamides have been shown to adopt various secondary structures, such as helical structures, linear strands, etc., but synthetic β -sheet structures are not well known. Here we demonstrate the intrachain β -sheet like folded structure of aromatic polyamides. Precise placement of H-bonding and π -stacking motifs along the polymer chain was necessary for the folding process. The control polymer without intramolecular H-bonding motifs assumed a random-coil structure. Unfolding of the polymer was observed at higher temperatures; however, the presence of π -surface containing guest molecules improved the thermal stability of the folded structure through co-facial host-guest π -stacking interactions. The possible applications of these molecules as through-space electron-conducting materials, organocatalysts, etc. can be envisaged.
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