Spectroscopic investigation of \( p \)-quaterphenyl (QP)

QP is of considerable interest as a model compound for “molecular wires” (i.e., poly(p-phenylene)) and as a backbone for “molecular switches” and other electronic devices. Its optical properties are of crucial importance in the application of QP in laser dyes, wavelength shifters, and light emitters. – The purpose of the proposed project is to investigate the optical transitions of QP in the visible and ultraviolet regions by means of polarization spectroscopy on samples aligned in stretched polyethylene. Three diastereomeric rotamers are predicted for QP; how is this situation expected to influence the observed absorption spectrum of the compound?

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