A Novel Multichromophoric Supramolecular Architecture: Design, Synthesis and Characterization

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Chromophores are responsible for the color of matter. The control of the interaction in multichromophores leads to functional dyes with novel properties. Furthermore, tailor-made spectroscopic properties could be achieved, which are a prerequisite for applications that require dyes with absorption and emission in a specific region of the visible spectrum. Perylene bisimides are outstandingly attractive dyes. They demonstrate exceptional chemical, thermal and photochemical stability, strongly absorb visible light, and show fluorescence quantum yields near unity.

In the present work, a novel multichromophoric perylene bisimide dye has been synthesized. The multichromophoric dye compound is characterized by NMR, IR, UV-vis, DSC, TGA and CV measurements. Furthermore, the optical, photochemical, thermal and electrochemical properties of the dye are investigated for the use in a number of different areas such as photovoltaic devices, polymer solar cells, biochemistry, medicine technology and photon technology.

References: