One- and two-photon-induced isomerization of styryl compounds possessing A-π-A′ structure

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Streszczenie

Two styryl compounds with A-π-A′ structure that feature a fixed pyridine ring as an electron acceptor (A) and pyridine or 5,6,7,8-tetrahydroisoquinoline cation as the other acceptor (A′) have been synthesized. Their structures were elucidated by means of NMR and IR spectroscopy. One-photon fluorescence, fluorescence quantum yields and lifetimes were investigated. It was found that both visible (408 nm) and near-infrared (800 nm) light promotes the conversion of the E-isomer of the studied compounds to the Z-isomer. Under the UV irradiation (310 nm) the obtained Z-isomer reverts to the initial form in tens of minutes. The observed inter-conversion was found to be fast and efficient. The trans-to-cis isomerization was followed by decomposition of the compound upon longer than 100 s exposure to light as indicated from mass spectra.

Słowa kluczowe

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