

Novel push-pull chromophores to prepare electro-optic modulators

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In recent years, a large number of push-pull organic molecules have been proposed as promising candidates for electronic and optical applications. Generally, the main effort has been focused on the design of chromophores with large first hyperpolarizability values (β); this would result in a wide variety of nonlinear optical (NLO) applications, such as modulators.^[1,2] In this work, we report an experimental and theoretical investigation of the NLO properties of novel push-pull systems derived from the dicyanomethylene-4*H*-chromene (DCM) group. Particular attention will be paid to better understand the molecular and electronic properties of these systems by using vibrational spectroscopic techniques and electrochemistry. Furthermore, these materials have been tested in a silicon-organic hybrid modulator based on an integrated dual-mode interferometer.^[3]

References

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