# Novel Styrylquinolinium Dye Thin Films Deposited by Pulsed Laser Deposition for Nonlinear Optical Applications



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| Résumé en anglais | The nonlinear optical (NLO) properties of novel styrylquinolinium dye thin films for photonic applications have been studied by the Z-scan, second harmonic generation (SHG), and third harmonic generation (THG) techniques, providing both the second- and third-order nonlinear optical parameters. The styrylquinolinium dye (E)-1-ethyl-4-(2-(4-hydroxynaphthalen-1-yl)vinyl)quinolinium bromide was synthesized by the Knoevenagel condensation, and its structure and physicochemical properties were determined by H-1 NMR, C-13 NMR, FTIR, UV-vis spectroscopy, and elemental analysis. Functional thin films were deposited by pulsed laser deposition (PLD) using UV TEA N-2 laser onto glass substrates and KCl, NaCl monocrystals at room temperature and vacuum at 10(-3) mbar/0.1 Pa. Further characterization of the films and target from native material by FTIR spectroscopy revealed that there was no difference between the deposited films and the initial material. Atomic force microscopy (AFM) and scanning electron microscopy (SEM) measurements have been also performed in order to provide information about the morphology and topology of the thin films. |
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**Liens**
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