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**Non-linear refractive index measurement of (2E)-3-[4-(Dimethylamino)phenyl]-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one and (2E)-3-(3,4-Dimethoxyphenyl)-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one**  
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#### **Abstract**

We report results from investigations of the nonlinear refractive index and nonlinear absorption coefficient of (2E)-3-[4-(Dimethylamino)phenyl]-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one and (2E)-3-(3,4-Dimethoxyphenyl)-1-(2,5-dimethylthiophen-3-yl)prop-2-en-1-one using Z-scan technique with a continuous wave (cw) laser at wavelengths 488 nm and 514 nm. The nonlinear refractive index and nonlinear absorption coefficient of both samples were evaluated. The origin of the nonlinear effects was discussed. Optical limiting based on light induced nonlinear refractive index variation is demonstrated. The limiting thresholds were estimated for both samples. The results suggested that these materials offer promise as candidates for optical limiting and optical devices in the low power regime. © 2011 World Scientific Publishing Company.

#### **Author Keywords**

dye; nonlinear absorption; nonlinear refractive index; optical limiting; Z scan

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