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Linear Optical Properties of a New Azo dye derived from Cefotaxime

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Abstract

New azo dye (AZ) compound derived from (6R,7R)-3-[(acetyloxy)methyl]-7-[[[(Z)-2-(2-aminothiazol-4-yl)-2-(methoxyimino)acetyl]amino]-8-oxo-5-thia-1-azabicyclo[4.2.0]-oct-2-ene-2-carboxylate sodium (Cefotaxime) with resorcinol, has been prepared. The synthesis of dye was characterized using FT-IR. Thin film of azo dye was prepared by spin coating method. The absorption spectra shows two major absorption bands: the first at the wavelength 323 nm and the second at the wavelength 455 nm. Absorption coefficients (α), refractive index (n), extinction coefficient (k) and optical band gap have been all calculated. Both refractive index (n) and extinction coefficient (k) decrease with increase of the wavelength.

Keywords: New Azo dye, Optical Properties, Cefotaxime.

1. Introduction

Cefotaxime (CFX) is classed as a third-generation bactericidal of cephalosporin. Regarding its antibacterial activity,

Cefotaxime has been found to possess different degrees of activity against