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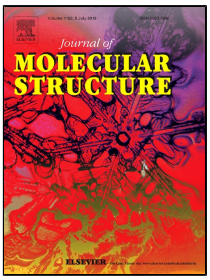

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Synthesis, Structural Analysis, and Absorption Properties of Disperse Benzothiazol-derivative Mono-azo Dyes

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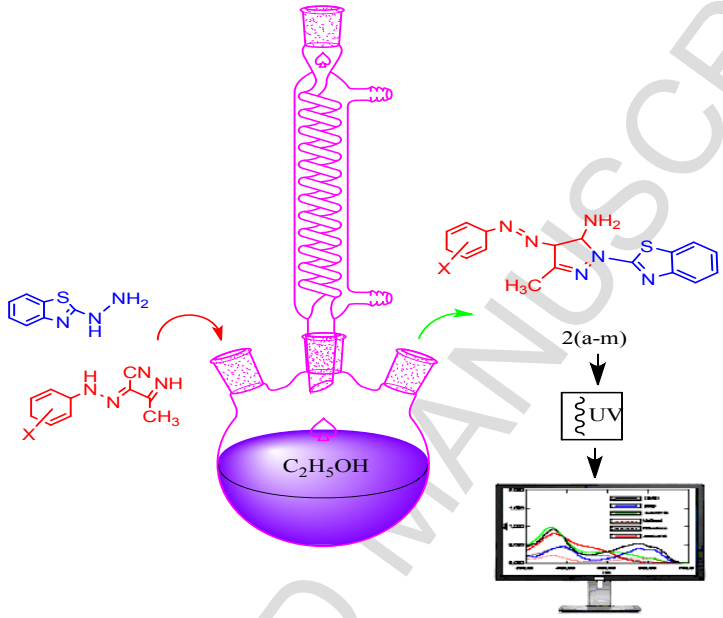

Abstract

A series of carbocyclic amines was reacted with 3-aminocrotonitrile to give the 2-arylhydrazone-3-ketiminobutyronitriles **1(a–m)**. Separately, 2-aminobenzothiazole was treated with hydrazine monohydrate to afford 2-hydrazinobenzothiazole. Then, compounds **1(a–m)** were reacted with 2-hydrazinobenzimidazole under reflux in ethanol to give the 1-(1,3-benzothiazol-2-yl)-3-methyl-4-arylazo-5-aminopyrazole compounds **2(a–m)**. The structures of the synthesized compounds were investigated using FT-IR and ^{1}H-NMR spectroscopic methods and elemental analysis. Furthermore, the absorption profiles of the dyes in different solvents and in acidic and basic media were investigated.

Keywords: mono-azo dye, diazo-coupling reaction, solvatochromism, benzothiazole

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