

Synthesis and application of new reactive disperse dyes based on isatin derivatives and their Antibacterial activity

A new two reactive disperse dyes based on a hybrid structure of isatin and benzanthrone or anthraquinone via 1, 3, 5 triazine spacer were prepared. The prepared compounds were characterized by ¹H-NMR, mass spectrometry and elemental analysis. The UV/vis absorption spectra and emission spectra were measured in N, N-dimethylformamide (DMF) solution at room temperature, the effects of substituent's on the emission spectra of these compounds were interpreted. The dyeing application of the prepared dyes on wool and polyamide-6 fabrics at various concentrations of dye and different pH were investigated as well as the exhaustion and dye fixation were studied. The antibacterial activity of the prepared reactive disperse dyes were studied against different kind of bacteria such as Staphylococcus aureus (Gram-positive bacteria) and Escherichia coli (Gram-negative bacteria). The antibacterial affinity of the prepared dyes was exhibit a significant effect compared with selected antibiotics as reference standard. The fastness properties of the dyed fabrics were studied which showing excellent wash fastness, rubbing and perspiration fastness as well as high stability to light..