

TUNABLE DUAL FLUORESCENCE OF 3-(2,2'-BIPYRIDYL)-SUBSTITUTED IMINOCOUMARIN. Ali H. Younes, Lei Zhu, Department of Chemistry and Biochemistry, Florida State University, Dittmer Building 757, Tallahassee, FL 32306-4390.

3-(2,2'-Bipyridyl)-substituted iminocoumarin molecules exhibit dual fluorescence. The molecules have one electron donor and two electron acceptors that are in conjugation. The dual fluorescence arises from two competing emissive charge transfer (CT) transitions that the molecule is uniquely capable of. The change in the emission spectra are traced back to different excitation spectra, which eliminates the possibility that dual emission occurs after the adiabatic reaction at the S_1 level. Consequently, the fluorescence quantum yield varies as the excitation wavelength is increased due to the presence of weakly and highly emissive excited states, respectively. Furthermore, the intensity of the two emission bands of the reported dual emitting system is tunable via the specific interaction between either electron acceptor with a second species, e.g. Zn^{2+} and Pb^{2+} .