

GARRETT WILKINS and CHRISTOHER A. DEROSA, Department of Chemistry, West Virginia Wesleyan College, Buckhannon, WV, 26201. Steric-Induced Fluorescence via Methyl Substitution in Chalcone Dyes.

Chemical research of luminescent dyes can have potential benefits in cell microscopy, optoelectronics and textiles. Luminescent chalcones have been studied extensively for their fluorescence properties and sensing capabilities, such as halochromism (pH), solvatochromism (polarity), and viscochromism (viscosity). Properties such as viscochromism can be utilized to sense the membrane viscosity in cells. To probe the viscochromic behavior of chalcones, bulky methyl-substituents were incorporated into the design of the chalcone to probe planarity, brightness and fluorescence turn-on based on environmental viscosity. This was achieved via Aldol condensation of aromatic ketones and *para*-(dimethylamino) benzaldehyde to incorporate bulky methyl groups at aromatic or vinyl positions. Synthesis of the derivatives was confirmed by ¹H NMR, TLC and IR spectroscopy. Preliminary results indicate the dyes have yellow-green fluorescence in dichloromethane (Q.Y. ~12%), and aggregation induced emission (AIE) properties. This presentation will discuss the optical properties in solution, future directions and possible applications.