

Abstract Submitted
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Morphology and conductivity studies on carbazole based GUMBOS thin films¹ KALYAN KANAKAMEDALA, NOUREEN SIRAJ, MADHAVI DIVAKAR, FARHANA HASAN, SUSMITA DAS, ISIAH WARNER, THEDA DANIELS-RACE, Louisiana State University — The use of thin films in optoelectronic devices such as organic light emitting diodes (OLEDs) and solar cells has been widely investigated. Historically with respect to the latter, multiple methods have been under study to improve device efficiency, yet the cost of production to meet general-purpose applications is still high. Addressing this challenge, we investigate the feasibility of carbazole based thin films as may be applied to future solar cell production. Based upon the recently discovered Group of Uniform Materials Based on Organic Salts (GUMBOS) [1], carbazole based GUMBOS and their nanoparticles were used in the preparation of thin films involving various techniques such as drop casting, vacuum drying, electrospraying and electrospinning. Via comparative studies of morphology and conductivity, we present results indicative of the potential opto-electronic functionality of these unique materials.

[1] A. Tesfai, B. El-Zahab, D.K. Bwambok, G.A. Baker, S.O. Fakayode, M. Lowry, I.M. Warner, Controllable formation of ionic liquid micro- and nanoparticles via a melt-emulsion-quench approach, *Nano Letters*, 8 (2008) 897-901.

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