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Characterization of NanoGUMBOS Using Conductive Probe Atomic Force Microscopy[1] NAVEEN JAGADISH, SERGIO DE ROOY, ATIYA JORDAN, ASHLEIGH WRIGHT, SUSMITA DAS, Louisiana State University, BILAL EL-ZAHAB, Massachusetts Institute of Technology, ISIAH WARNER, THEDA DANIELS-RACE, Louisiana State University — In our work on hybrid (organic-inorganic) electronic materials (HEMs), we have developed a reasonably facile method for characterizing GUMBOS or a **G**roup of **U**niform **M**aterials **B**ased on **O**rganic **S**alts. In addition to the versatility of traditional ionic liquids (i.e.-solubility, melting point, viscosity), nanoGUMBOS are functionalizable to exhibit properties such as fluorescence, magnetic susceptibility, and even antimicrobial activity. However, given our interest in the electrical properties of HEMs, we have made first-time measurements of nanoGUMBOS, using CP-AFM, in order to deduce their room temperature current-voltage characteristics. In conjunction with the nanoscale imaging of AFM alone, we have observed both the morphology and conductivity of these unique materials. Our results bode well for combining GUMBOS with substrates of more traditional materials, such as metals or semiconductors, to serve as the basis for future HEMs-based devices.

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