



## **Thinking past photovoltaics for insight on metal halide semiconductors**

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Hybrid organic/inorganic semiconductors (HOIS) offer tremendous opportunities to control fundamental properties that underpin energy technologies. While currently there are enormous worldwide efforts exploring, exploiting and improving a narrow class of HOIS primarily for photovoltaic (PV) applications, there are opportunities to transcend and/or supplement this initial focus on PV research. Inherent in these unique hybrid systems is the dichotomy between organic/molecular moieties (quantum chemistry) and inorganic/extended systems (solid state physics). As a result, they exhibit properties that are not solely a juxtaposition of the inorganic and organic sub-units, but are instead truly emergent phenomena, with the concomitant ability to control and design new properties by judicious choice of inorganic and organic components. This presentation will provide an overview of these materials as well discuss demonstrated properties of these systems to control the spin degree of freedom. The presentation will include not only PV efforts but collaborative work in the Center for Hybrid Organic Inorganic Semiconductors for Energy center for examining chiral induced spin selectivity (CISS) in hybrid semiconductor systems.

*Host: Dr. Nakita Noel*