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Thin Film Optical Measurements on a Low-bandgap Platinum-Acetylide Conjugated Polymer Developed for Use in Organic Solar Cells
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An important barrier to overcome in producing high efficiency organic solar cells is to extend light harvesting capabilities into the near infrared. With strong absorption through the visible region and possible involvement of the triplet state in charge generation, Pt-acetylides have received recent attention as interesting and promising materials for photovoltaic applications. This presentation focuses on the thin film optical characterization of p-PtBTD-Th. In order to obtain the absorption coefficient of this material, multiple films of varied thickness were made and characterized by UV to NIR transmission and reflection measurements. We employed a thin film analysis using a Drude-Lorentz model to calculate the optical constants and to estimate the interference effects. From this model we were able to extract the absorption and extinction coefficients.

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