**Manuscript Title:**

Measurement of Exciton Transport in Conjugated Polymer Nanoparticles

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**Manuscript Type:**

Article

**Journal Section:**

C1: Energy Conversion and Storage; Energy and Charge Transport

C4: Physical Processes in Nanomaterials and Nanostructures

Dear Editor,

Attached is an electronic copy of an original manuscript titled “*Measurement of Exciton Transport in Conjugated Polymer Nanoparticles*”. Please consider this manuscript for publication in **J. Phys. Chem. C.** The results regarding the measurement of exciton diffusion and energy transfer efficiency in dye-doped PFBT nanoparticles are described in this manuscript. Further development of our previous exciton diffusion-energy transfer model is discussed, including accounting for exciton quenching by inherent defects in the polymer as well as dopant dyes. The modeling results indicate that regardless of the large exciton diffusion constant, a short exciton diffusion length of 12 nm was measured, and is likely to be determined by the defect density in conjugated polymers, which is an often overlooked issue in these systems. These particles are highly fluorescent, and exhibit efficient energy transfer to dopant dyes, yielding a substantial red shift in the spectra of the nanoaprticles with negligible losses in fluorescent quantum yield. We believe these particles are useful for a variety of applications including fluorescence-based imaging or multiplexing applications. Given the broad, current interest in the photophysics of nanoscale systems and the development of novel nanoparticles for imaging and sensing, as well as the implications for photovoltaic applications, we believe this work is suitable for publication in **J. Phys. Chem. C.**

We believe this work represents a significant advance in the understanding of relevant photophysical phenomena in organic semiconductors, as well as the development of novel fluorescence based imaging agents. We therefore submit this manuscript for consideration for publication in **J. Phys. Chem. C.** Thank you for your consideration. We look forward to your favorable response.

Sincerely,

Jason D. McNeill

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This manuscript is not being considered by any other journal.