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Hybrid Organic/Inorganic Semiconductor Structures: Efficient Förster Energy Coupling and Prospective Optical Devices¹

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Hybrid organic/inorganic semiconductor structures offer the prospect of combining the favourable electrical and optical characteristics of each to achieve desirable new device functions. They also provide a test bed to study the exciton state interactions between these distinct semiconductor varieties and the resultant energy transfer processes that occur between them. In this talk I will describe work on conjugated polymer/GaN structures for which efficient non-radiative Förster transfer can be achieved from the inorganic quantum well excitons to the organic (polymer) excitons. I will also discuss the prospects for optical devices based on this and related hybrid systems.

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