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Title:	Manipulation of the exciton diffusion length of conjugated polymer nanoparticles: role of electron and hole scavenger molecules
Authors:	Kumar, Ajeet (/jspui/browse?type=author&value=Kumar%2C+Ajeet)
Keywords:	electron and hole acceptor encapsulated polymer nanoparticles Exciton diffusion
Issue Date:	2020
Publisher:	Indian Academy of Sciences.
Citation:	Bulletin of Materials Science, 43(1)
Abstract:	Exciton generation, migration and dissociation are key fundamental processes that dictate the efficiency of optoelectronic devices. Here, we investigate exciton diffusion process of conjugated polymer nanoparticles (PNPs) in the presence of electron and hole scavenger molecules using time-resolved spectroscopy. We found that the exciton diffusion length of hole transporting PNPs, decreases in the presence of hole scavenger molecule and it increases in the presence of electron scavenger molecule. Analysis reveals that the diffusivity of excitons can be controlled by changing the nature of scavenger molecules. Such fundamental study is important for developing devices where lower and higher exciton diffusivities are required depending on the requirement of application mode.
Description:	Authors sequences are not necessary in order Only IISERM authors are available in the record.
URI:	<a href="https://link.springer.com/article/10.1007/s12034-019-2035-6">https://link.springer.com/article/10.1007/s12034-019-2035-6</a> ( <a href="https://link.springer.com/article/10.1007/s12034-019-2035-6">https://link.springer.com/article/10.1007/s12034-019-2035-6</a> ) <a href="http://hdl.handle.net/123456789/3192">http://hdl.handle.net/123456789/3192</a> ( <a href="http://hdl.handle.net/123456789/3192">http://hdl.handle.net/123456789/3192</a> )
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