



Library Indian Institute of Science Education and Research Mohali



DSpace@IISERMohali (/jspui/)

/ Thesis & Dissertation (/jspui/handle/123456789/1)

/ Master of Science (/jspui/handle/123456789/2)

/ MS-14 (/jspui/handle/123456789/1078)

Please use this identifier to cite or link to this item: <http://hdl.handle.net/123456789/1237>

Title: Excited State Dynamics of Semiconducting Nanomaterials: Quantum Dots (CdSe) and Nanofibers (P3HT)

Authors: Kumar, Ajeet (/jspui/browse?type=author&value=Kumar%2C+Ajeet)

Issue Date: 9-Oct-2019

Abstract: Nanomaterials provide lot of opportunity in improvement & new generation of photovoltaics. Their wide-bandgap are attracting an increased attention for their potential application in emerging energy. In recent year Quantum dots (QDs) have emerged as a promising candidate for light harvesting and optoelectronics. QDs have opened up new ways of utilizing hot electrons and generate multiple exciton upon absorption of a single photon. On the other hand, semiconducting polymer have numerous applications in optoelectronics as well as in energy conversion. In our case we are interested in conjugated polymer in which exciton delocalization take place up to several monomeric units upon photo excitation when they are in their aggregated forms. Here we are interested in understanding the exciton dynamics within QDs and j-aggregates of P3HT polymer nanofibers using femtosecond resolved pump-probe spectroscopy. Using this technique, we have advantages to characterize the excited state species which are formed for a very short time scale(100fs-ps) under photoexcitation. In this technique we ultrafast short pulses (<100fs) which are capable to probe these the dynamics of such species.

URI: <http://hdl.handle.net/123456789/1237> (<http://hdl.handle.net/123456789/1237>)


Appears in MS-14 (/jspui/handle/123456789/1078)

Collections:

Files in This Item:

File	Description	Size	Format	
MS14171.pdf (/jspui/bitstream/123456789/1237/3/MS14171.pdf)	Full Text.pdf	4.15 MB	Adobe PDF	View/Open (/jspui/bitstream/123456789/1237/3/)

Show full item record (/jspui/handle/123456789/1237?mode=full)

 (/jspui/handle/123456789/1237/statistics)

Items in DSpace are protected by copyright, with all rights reserved, unless otherwise indicated.