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**Photo-processing P3HT conjugated polymers, in solution: A new route towards ordered polymeric structures.** NEWTON BARBOSA NETO, Federal University of Para, MARCIA DUTRA, Federal University of Uberlandia, PAULO ARAUJO, The University of Alabama, RENATO SAMPAIO, University of North Carolina at Chapel Hill — Solution aggregated thin films of conjugated polymers have demonstrated to be promising materials for many applications, e.g., solar cells and field-effect transistors. There are many standard methods to generate aggregates in polymeric solution, which includes poor solvent addiction and solution temperature manipulation. Here, we demonstrate a new approach to induce aggregate formation on solution of P3HT polymer. Under light excitation with 355 nm or 532 nm pulsed laser the polymer exhibit significant changes on its UV-Vis spectrum which are most known in the literature as the formation of H-J aggregates and additional new bands associated with polaron formation. Such changes in the amorphous phase of the polymers are seen in specific conditions of solvent combinations. We show also the dependency on the excitation laser power which can be identified as a threshold to ignite the formation of the new structure. We are grateful to CNPq and CAPES for financial support.

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