NWS11-2011-000098

Abstract for an Invited Paper
for the NWS11 Meeting of
the American Physical Society

Recent advances in organic semiconducting materials[1]

OKSANA OSTROVERKHOVA, Oregon State University

Organic semiconductors have attracted attention due to their low cost, easy fabrication, and tunable properties. Applications of organic materials in thin-film transistors, solar cells, light-emitting diodes, sensors, and many other devices have been actively explored. Recent advances in organic synthesis, material processing, and device fabrication led to significant improvements in (opto)electronic device performance. However, a number of challenges remain. These range from lack of understanding of basic physics of intermolecular interactions that determine optical and electronic properties of organic materials to difficulties in controlling film morphology and stability. In this presentation, current state of the field will be reviewed and recent results related to charge carrier and exciton dynamics in organic thin films will be presented.

In collaboration with Whitney Shepherd, Mark Kendrick, Andrew Platt, Oregon State University; Marsha Loth and John Anthony, University of Kentucky.

[1]This work was supported by NSF (CAREER) grant DMR-0748671.