

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Predicting structure/property relations in polymeric photovoltaic devices. GAVIN BUXTON, NIGEL CLARKE, Durham University — Plastic solar cells are attractive candidates for providing cheap, clean and renewable energy. However, such devices are critically dependent on the internal structure, or morphology, of the polymer constituents. We have developed a model that enables us to predict photovoltaic behaviour for arbitrary morphologies, which we also generate from numerical simulations. We illustrate the model by showing how diblock copolymer morphologies can be manipulated to optimise the photovoltaic effect in plastic solar cells. In this manner, we can correlate photovoltaic properties with device structure and hence guide experiments to optimise polymer morphologies to meet photovoltaic needs.

Gavin Buxton
Durham University

Date submitted: 25 Sep 2006

Electronic form version 1.4