



実験報告書様式(一般利用課題・成果公開利用)

(※本報告書は英語で記述してください。ただし、産業利用課題として採択されている方は日本語で記述していただいても結構です。)

 	承認日Date of Approval 2013/11/23 承認者Approver Jun-ichi SUZUKI 提出日Date of Report 2013/07/12
課題番号 Project No. 2013A0199 実験課題名 Title of experiment A SANS experiment of the effect of nucleating agents on the phase behavior of OPV donor-acceptor blends. 実験責任者名 Name of principal investigator M. Sferrazza 所属 Affiliation Brussels University	装置責任者 Name of responsible person J. Suzuki 装置名Name of Instrument/(BL No.) BL-15 実施日Date of Experiment 15-18/05/2013

試料、実験方法、利用の結果得られた主なデータ、考察、結論等を、記述して下さい。(適宜、図表添付のこと)  
 Please report your samples, experimental method and results, discussion and conclusions. Please add figures and tables for better explanation.

1. 試料 Name of sample(s) and chemical formula, or compositions including physical form.  P3AT,P3BT,P3BT,PCBM,dibenzylidene sorbitol (DBS), adipic acid $C_{10}H_{18}S$ / $C_{84}H_{28}O_4$ / $C_{72}H_{14}O_2$ / C60 / $C_7H_8S_2$ Solid samples
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2. 実験方法及び結果 (実験がうまくいかなかった場合、その理由を記述してください。) Experimental method and results. If you failed to conduct experiment as planned, please describe reasons. A classical SANS was performed to study the bulk heterojunction (BHJ) system composed of poly(3-alkylthiophenes) [ie, P3AT where A = butyl (P3BT), hexyl (P3HT) and octyl (P3OT)] and fullerenes. The effect of addition of nucleating agents into the BHJ was probed  The samples consisted of micron thick solution cast films on aluminium substrate.
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In this SANS experiments (our first experiment on the SANS beam-line at J-PARC) the bulk heterojunction (BHJ) devices composed of poly(3-alkylthiophenes) [ie, P3AT where A = butyl (P3BT), hexyl (P3H P3BT T) and octyl (P3OT)] and fullerenes (varying the side chain ie C<sub>60</sub>, PCBM and bis-PCBM) was studied.

The phase behaviour of the donor conjugated polymer-acceptor fullerene blends as a function nucleating agent (NA) concentrations was probed (dibenzylidene sorbitol and adipic acid) The reason to add the nucleating agents (NAs) was connected to the change the crystalline domain interfacial area. The change in crystallinity on the segregation behaviour in the thin BHJ films was probed with SANS.

Data are under analysis