## **Supporting Information**

## Control the Morphology and Function of Low Band Gap Polymer: Bis-Fullerene Mixed Heterojunctions in Organic Photovoltaics with Selective Solvent Vapor Annealing

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The method to test whether the aggregates in the samples are PCPDTBT clusters is similar to that which was used to test whether the identity of the aggregates are ICBA.

In this procedure, the volume fraction of PCPDTBT in the surrounding mixed phase ( $\Phi_{P,m}$ ) is calculated by Equation 1:

$$\phi_{P,m} = \frac{SLD_{ICBA} - SLD_m}{SLD_{ICBA} - SLD_{PCPDTBT}} \tag{1}$$

In this case, all of the ICBA is in the surrounding matrix, so that the volume fraction of PCPDTBT in the surrounding phase in the whole sample  $(w_{P,m})$  is found by Equation 2.

$$w_{P,m} = w_{ICBA} \times \frac{\phi_{P,m}}{1 - \phi_{P,m}} \tag{2}$$

Finally, the volume fraction of the dispersed phase in the whole sample  $\binom{W_{agg,P}}{W_{agg,P}}$  is calculated by Equation 3:

$$w_{agg,P}^{\ cal} = w_p - w_{P,m} = 0.4 - w_{ICBA} \times \frac{\phi_{P,m}}{1 - \phi_{P,m}}$$
(3)