

Supplementary Information for

Interfacial Concentration Profiles of Rubbery Polyolefin Lamellae Determined by Quantitative Electron Microscopy

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In the main paper, we showed a comparison of a particular set of TEM data and SCFT results of the polyolefin blend B30. In this document, we show the range of results obtained by TEM. Each figure in this document is composed of an independent bright field image, thickness map, and a comparison between experimental and theoretical TEM intensities. The experimental data (filled circles in the images) is generated by integrating along the direction of the lamellae and normalizing by an image of an empty sample holder. The theoretical profile (solid line), is calculated using our SCFT results (Figure 3 of the text), eq 2, and parameters from Table 1 of the text. The direction x is defined along the direction normal to the lamellae. All images were taken at 101 K, with a dose $< 10^5$ e⁻/nm².

In most cases, we obtained data that are similar to those shown in the main paper (see Figures S1-S3). Occasionally, we obtained images in which a comparison was difficult to make using our methodology, as in Figure S4. Note that the thickness maps of this sample (Figure S4b) is significantly less uniform than those of other samples (Figures S1b, S2b, and S3b).

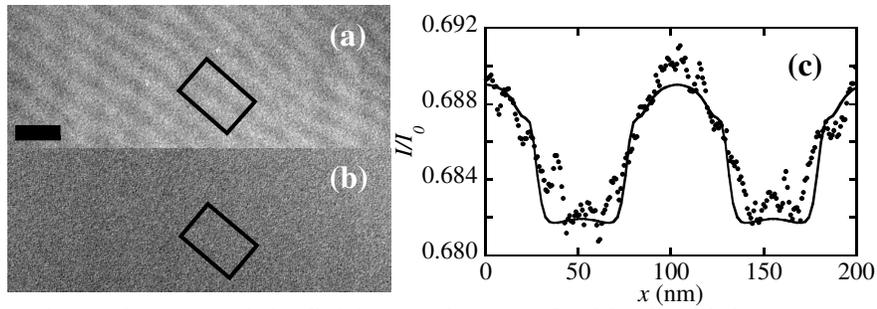


Figure S1. (a) Bright field TEM image of B30, (b) thickness map, and (c) comparison between experimental and theoretical results. Scale bar is 200 nm. Boxes in (a) and (b) denote the data used for (c). $(Qt)_{AVG}$ from the box in (b) is 0.378 ± 0.029 .

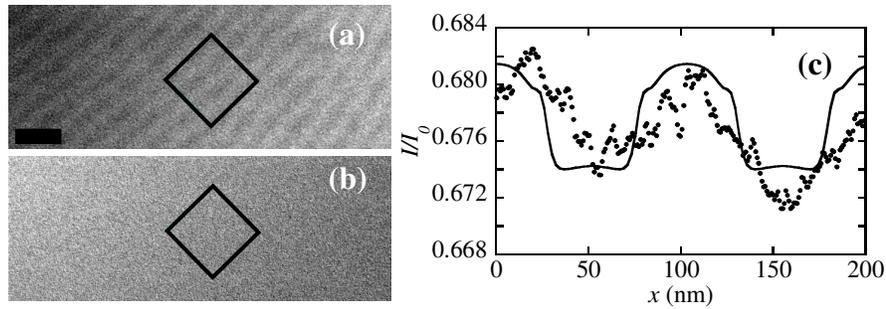


Figure S2. (a) Bright field TEM image of B30, (b) thickness map, and (c) comparison between experimental and theoretical results. Scale bar is 200 nm. Boxes in (a) and (b) denote the data used for (c). $(Qt)_{AVG}$ from the box in (b) is 0.411 ± 0.029 .

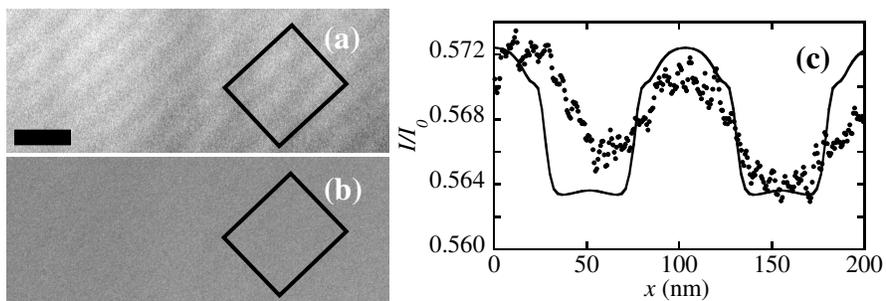


Figure S3. (a) Bright field TEM image of B30, (b) thickness map, and (c) comparison between experimental and theoretical results. Scale bar is 200 nm. Boxes in (a) and (b) denote the data used for (c). $(Qt)_{AVG}$ from the box in (b) is 0.566 ± 0.030 .

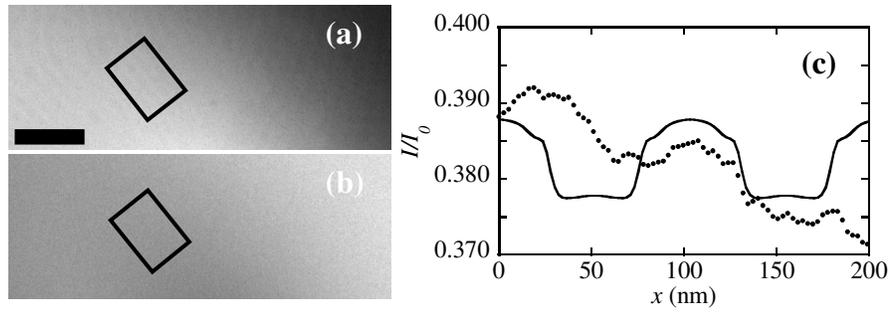


Figure S4. (a) Bright field TEM image of B30, (b) thickness map, and (c) comparison between experimental and theoretical results. Scale bar is 500 nm. Boxes in (a) and (b) denote the data used for (c). $(Qt)_{AVG}$ from the box in (b) is 0.961 ± 0.036 .