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Effect of Processing Conditions on Additive DISC Patterning of P3HT Films†

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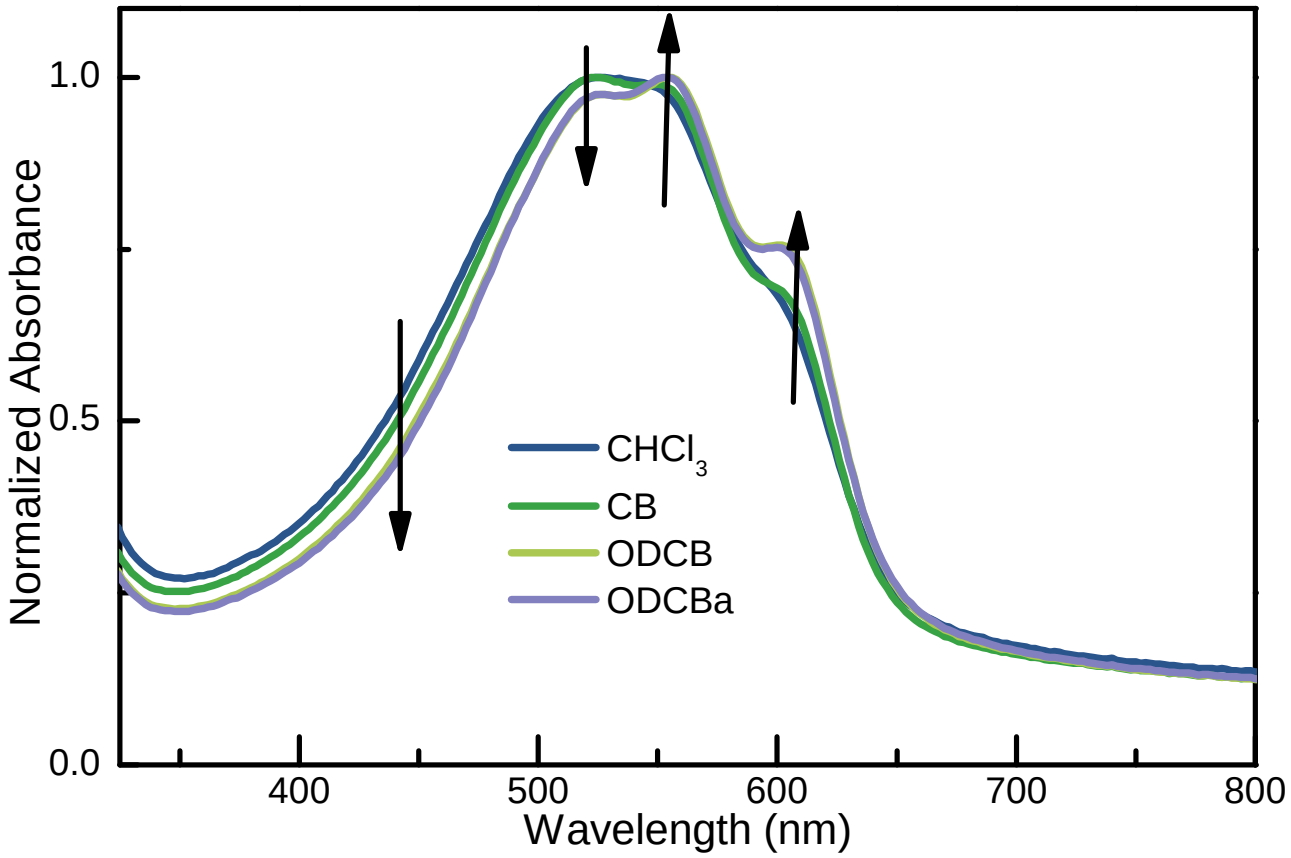

Fig. 1 *Normalized UV-vis spectra of P3HT films coated from $CHCl_3$ (blue), CB (green), ODCB (lt green), and ODCB + annealing at 150° (periwinkle).*

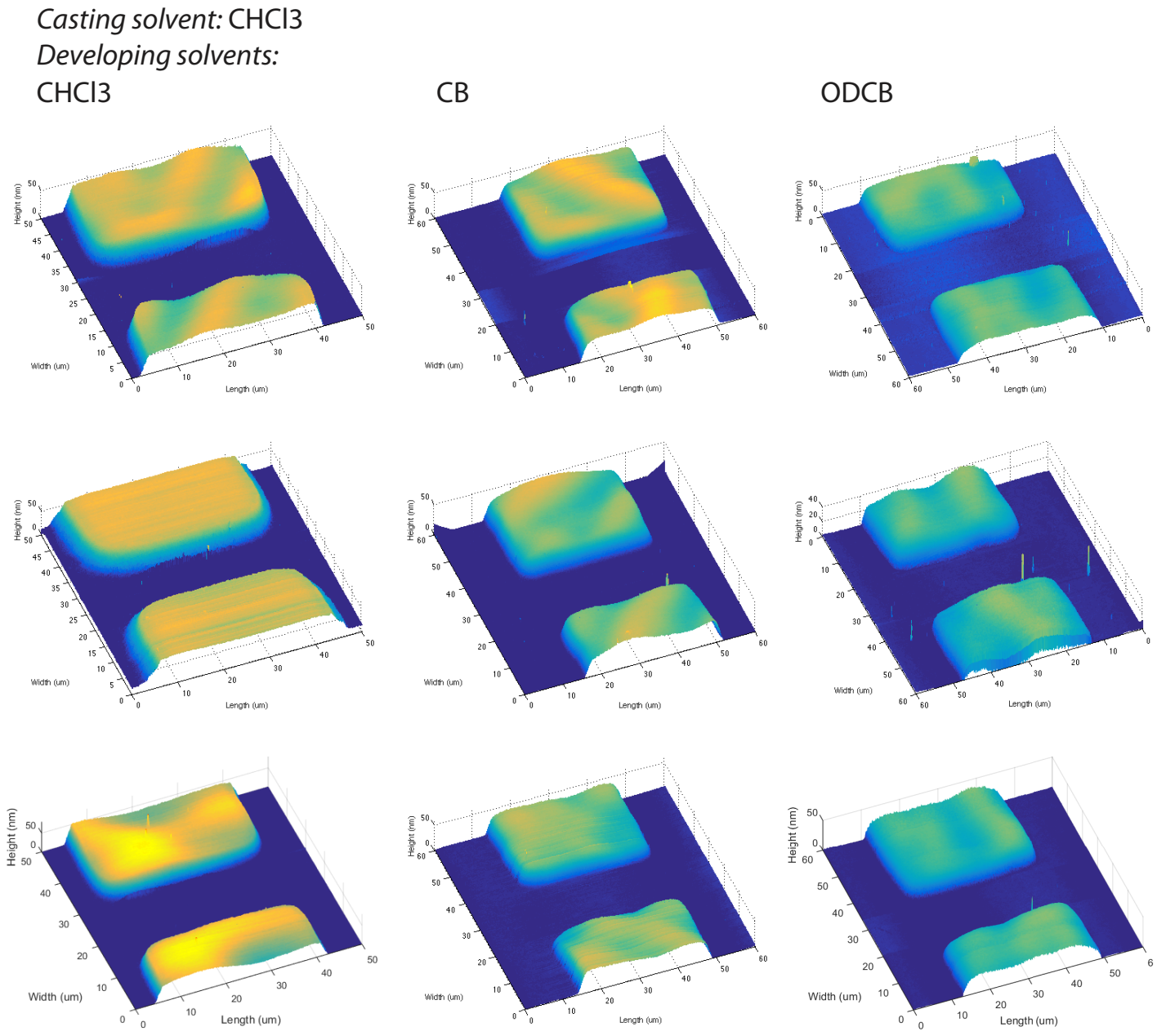

Fig. 2 *AFM images of DISC patterned features with $CHCl_3$ as the casting solvent and $CHCl_3$, CB and ODCB as developing solvents. Several examples of patterned features are depicted for each patterning condition.*

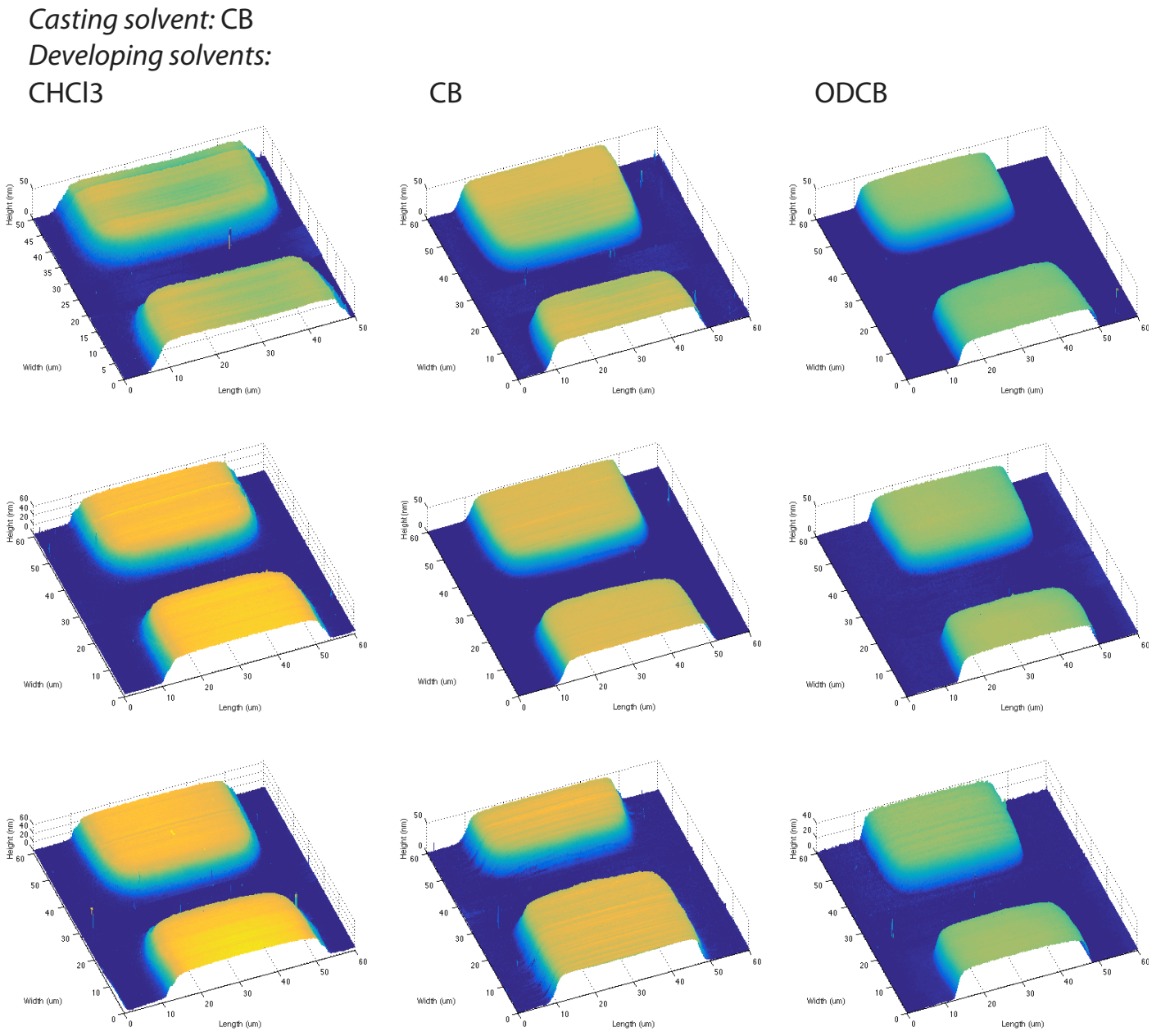

Fig. 3 *AFM images of DISC patterned features with CB as the casting solvent and $CHCl_3$, CB and ODCB as developing solvents. Several examples of patterned features are depicted for each patterning condition.*

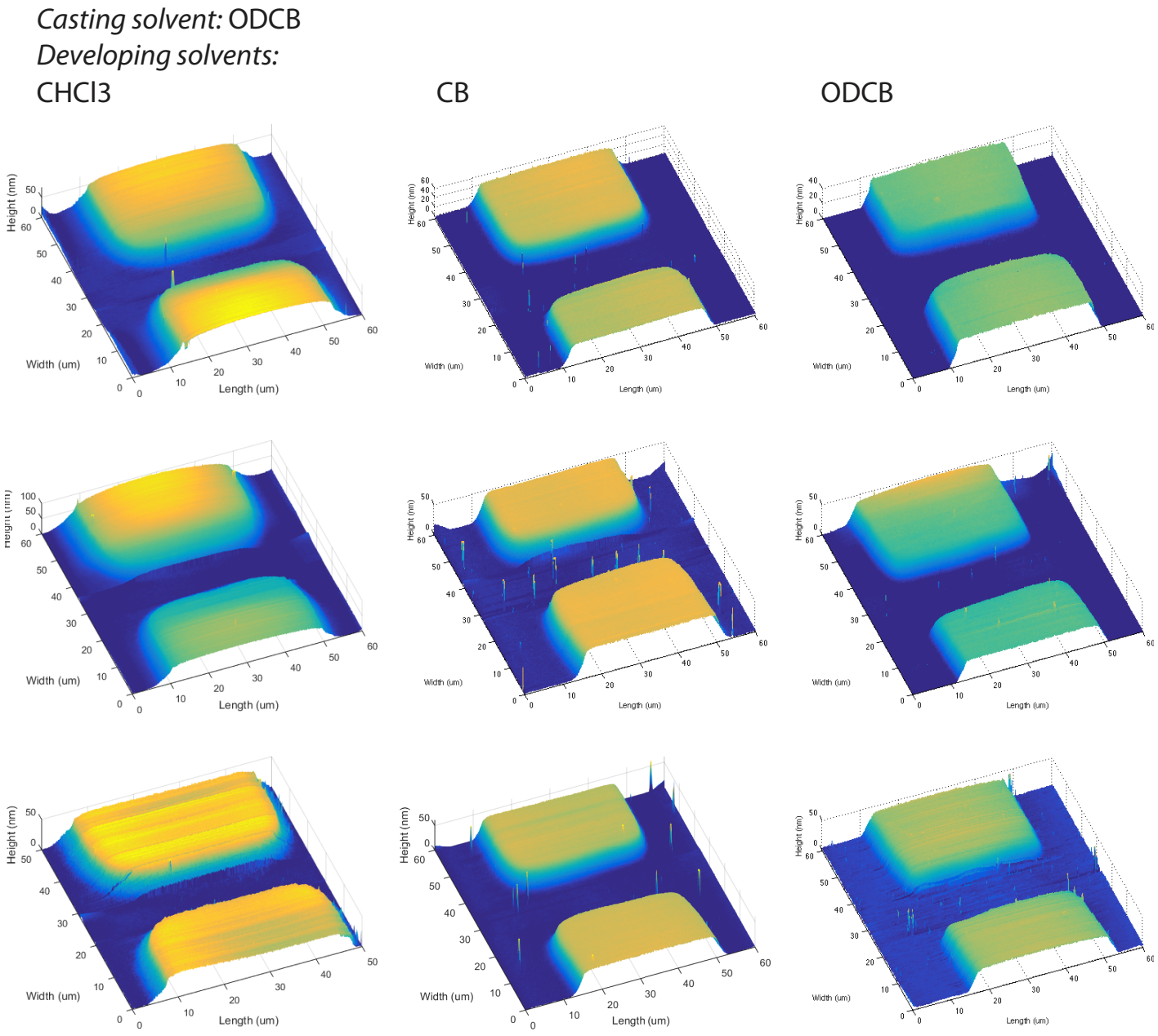

Fig. 4 *AFM images of DISC patterned features with ODCB as the casting solvent and $CHCl_3$, CB and ODCB as developing solvents. Several examples of patterned features are depicted for each patterning condition.*

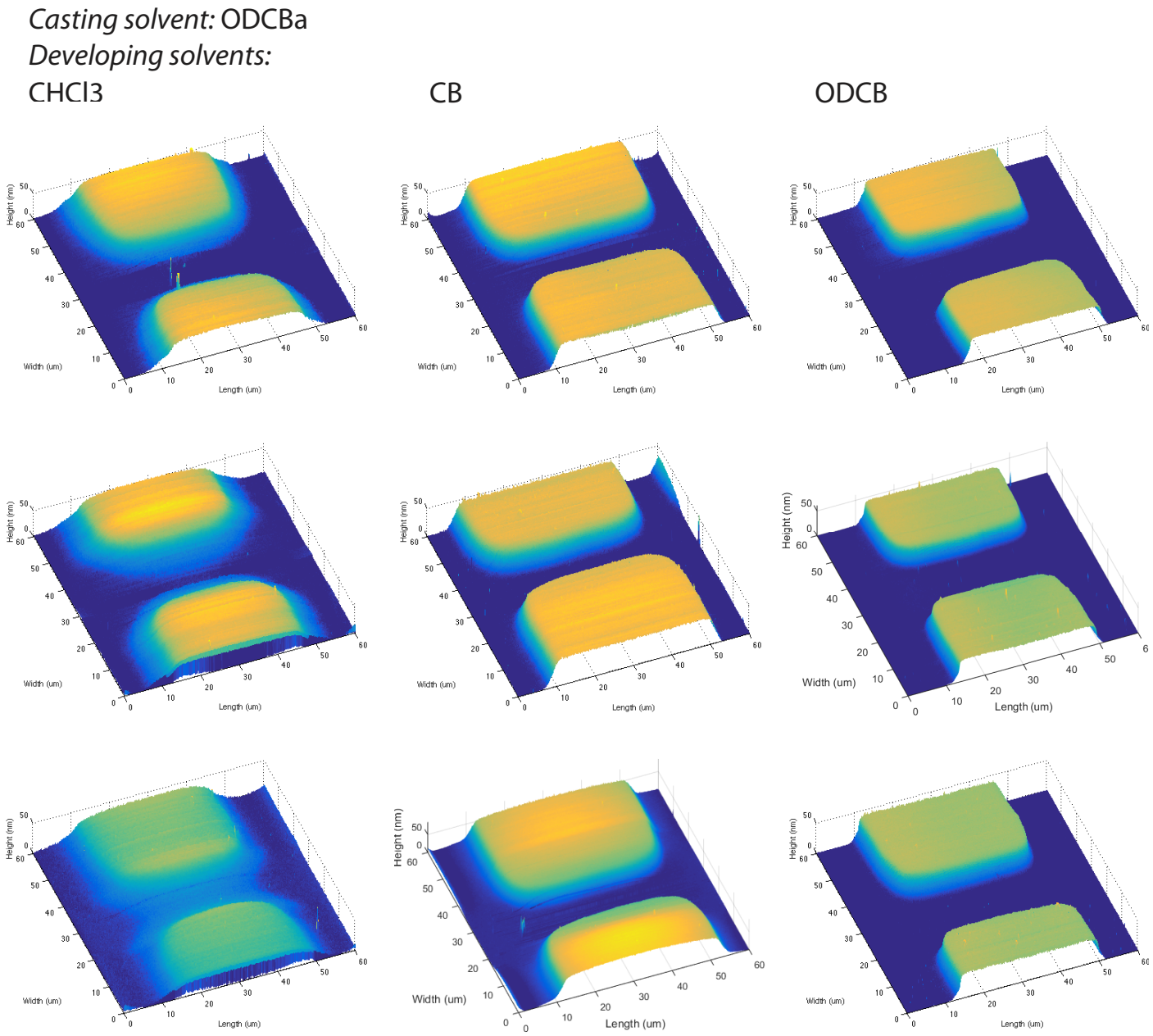

Fig. 5 *AFM images of DISC patterned features with ODCB as the casting solvent followed by 120 minutes of annealing at 150° C and $CHCl_3$, CB and ODCB as developing solvents. Several examples of patterned features are depicted for each patterning condition.*

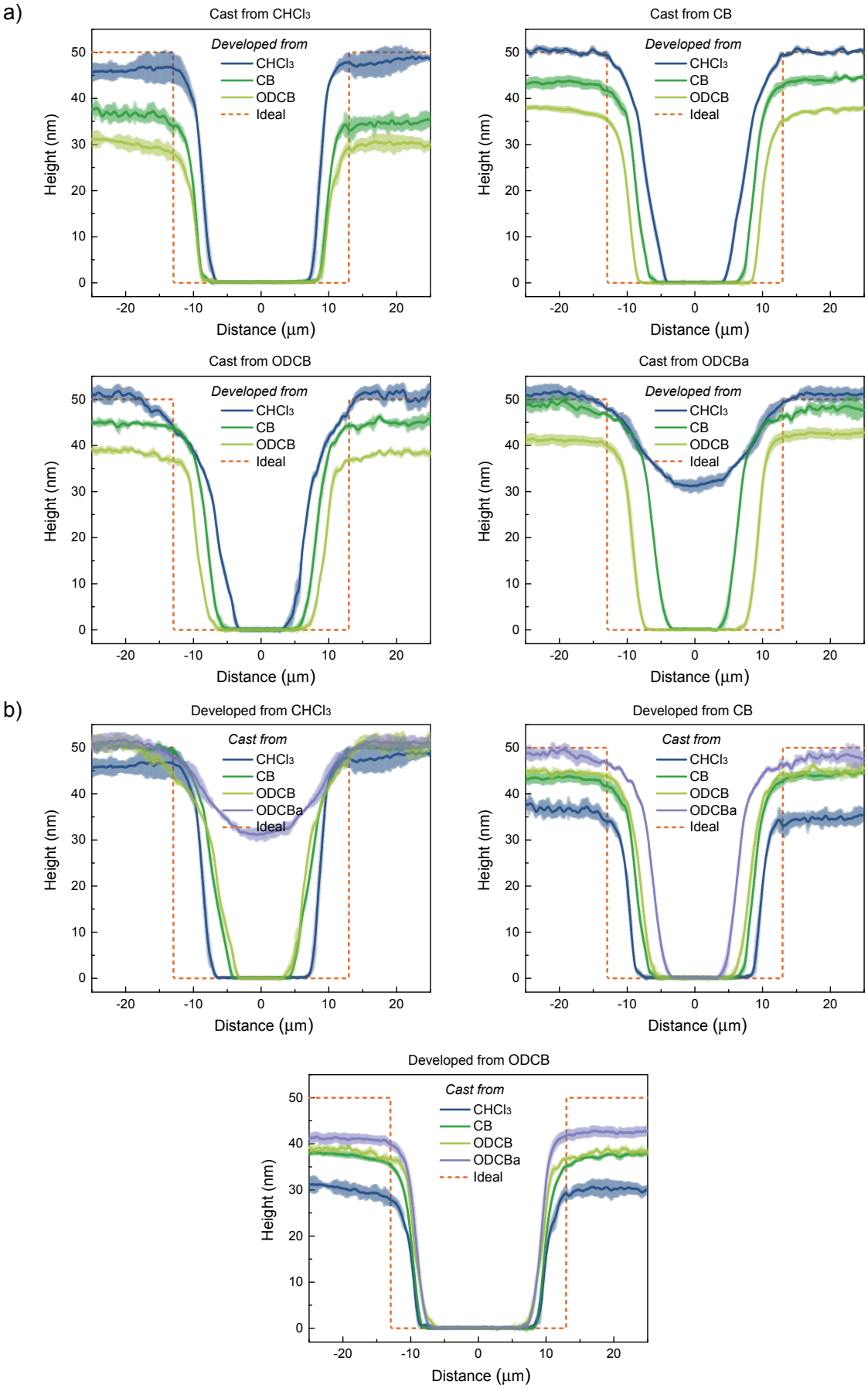

Fig. 6 *Cross-sections for the AFM images depicted in Figures 4 and S1-S4. a) The cross-sections are depicted in terms of the casting condition and b) the cross-sections are depicted in terms of the development condition.*

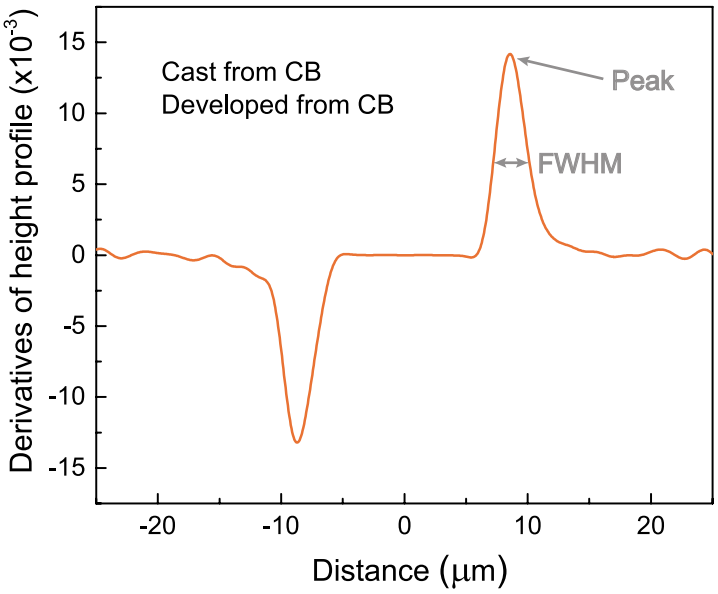

Fig. 7 *Derivative of the AFM cross section for the sample coated from CB and developed using CB. Table 1 in the main text lists the peak position measured from the center of the feature and FWHM of the edge derivative.*

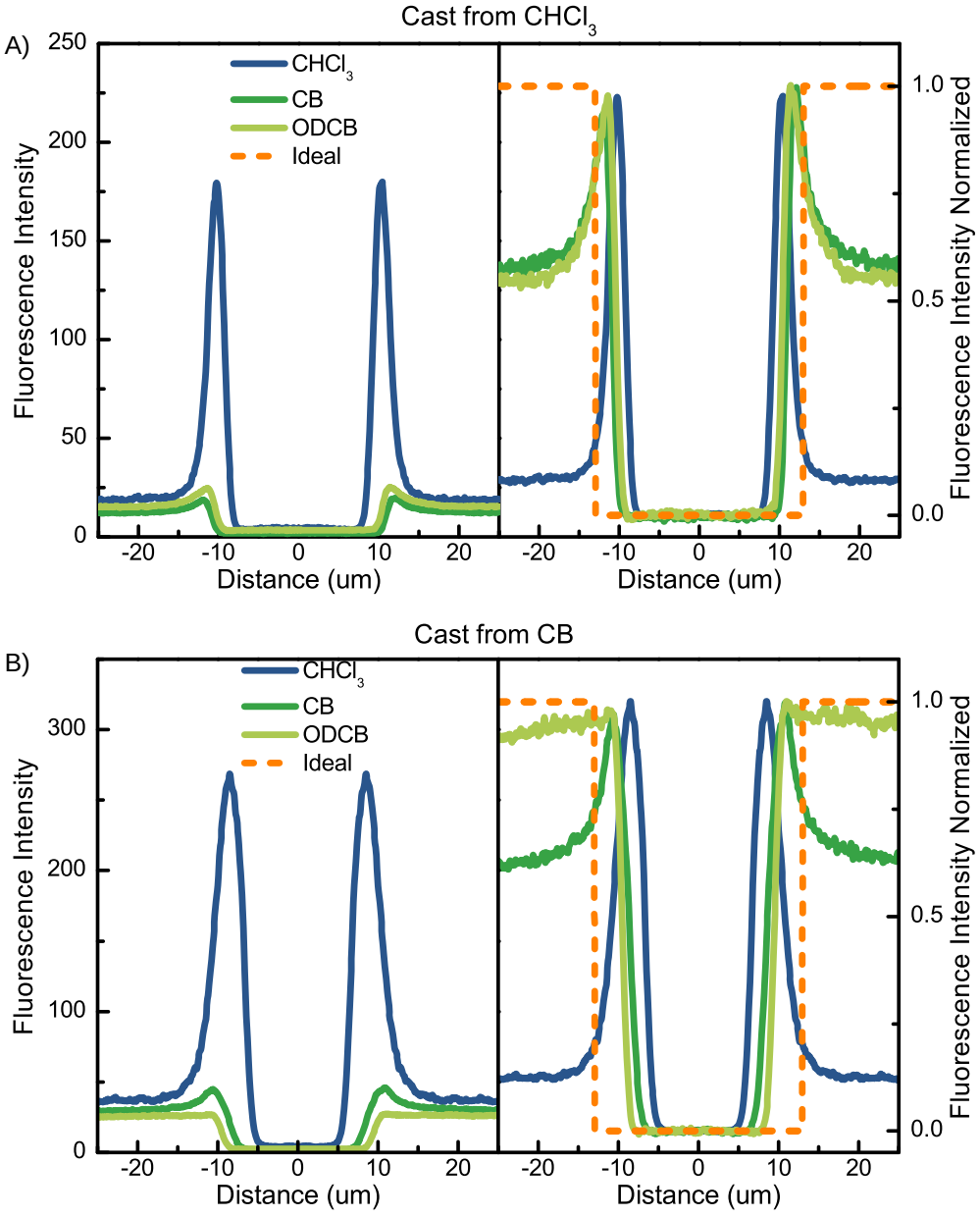

Fig. 8 *Confocal quantitative and normalized data for casting solvents A) $CHCl_3$ and B) CB*

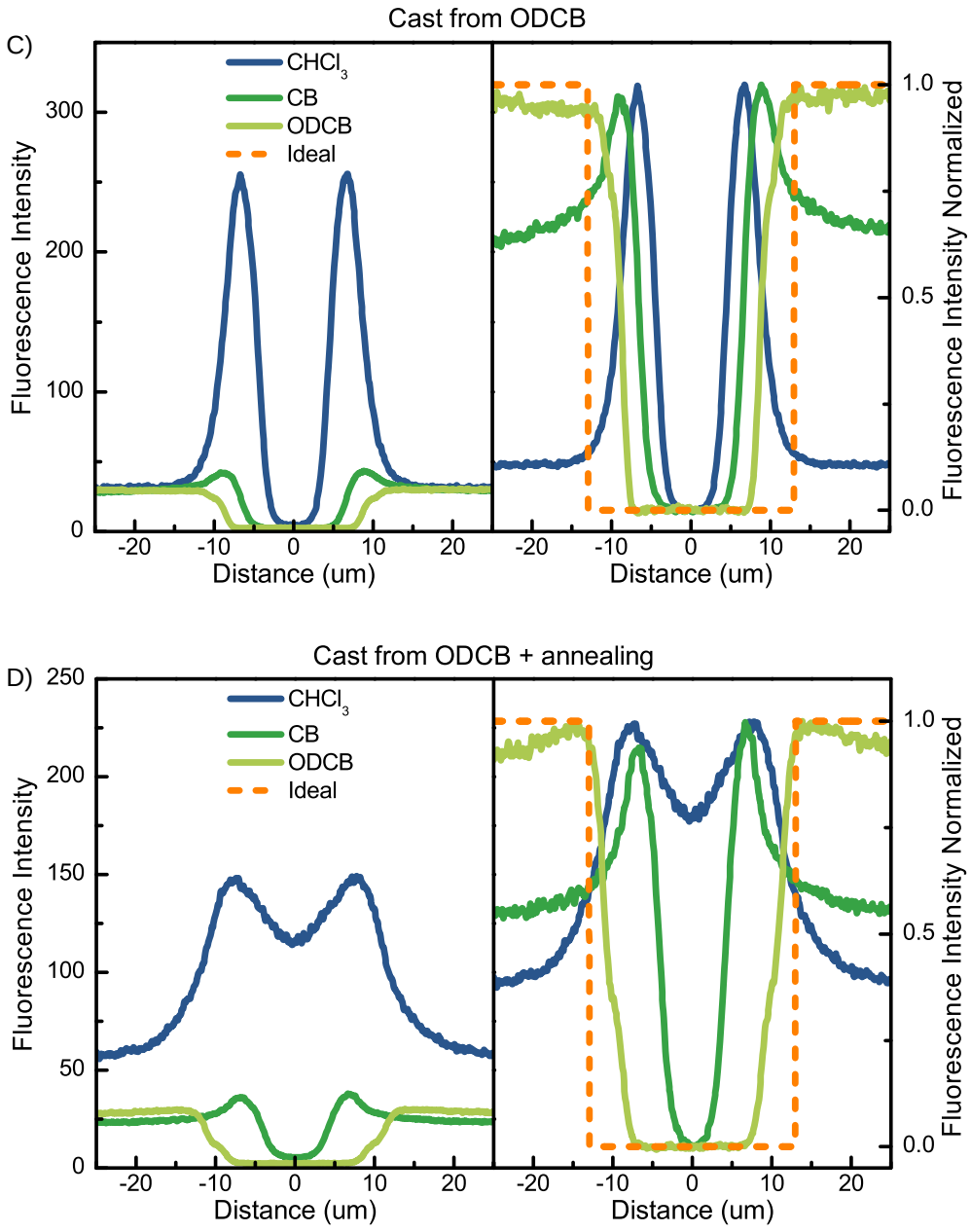

Fig. 9 *Confocal quantitative and normalized data for casting solvents C) ODCB and D) ODCB + annealing*

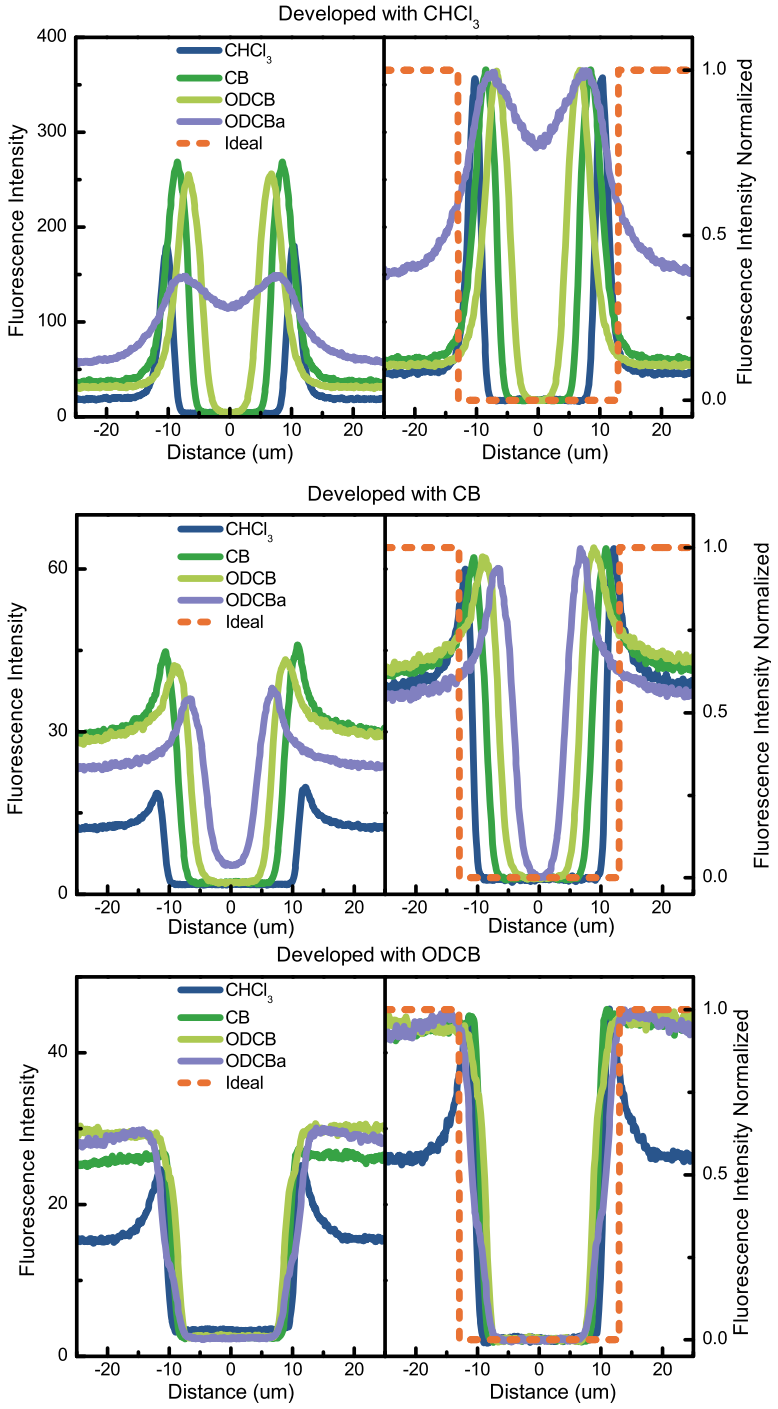

Fig. 10 *Confocal quantitative and normalized data for developing solvents a) $CHCl_3$, b) CB, and c) ODCB*

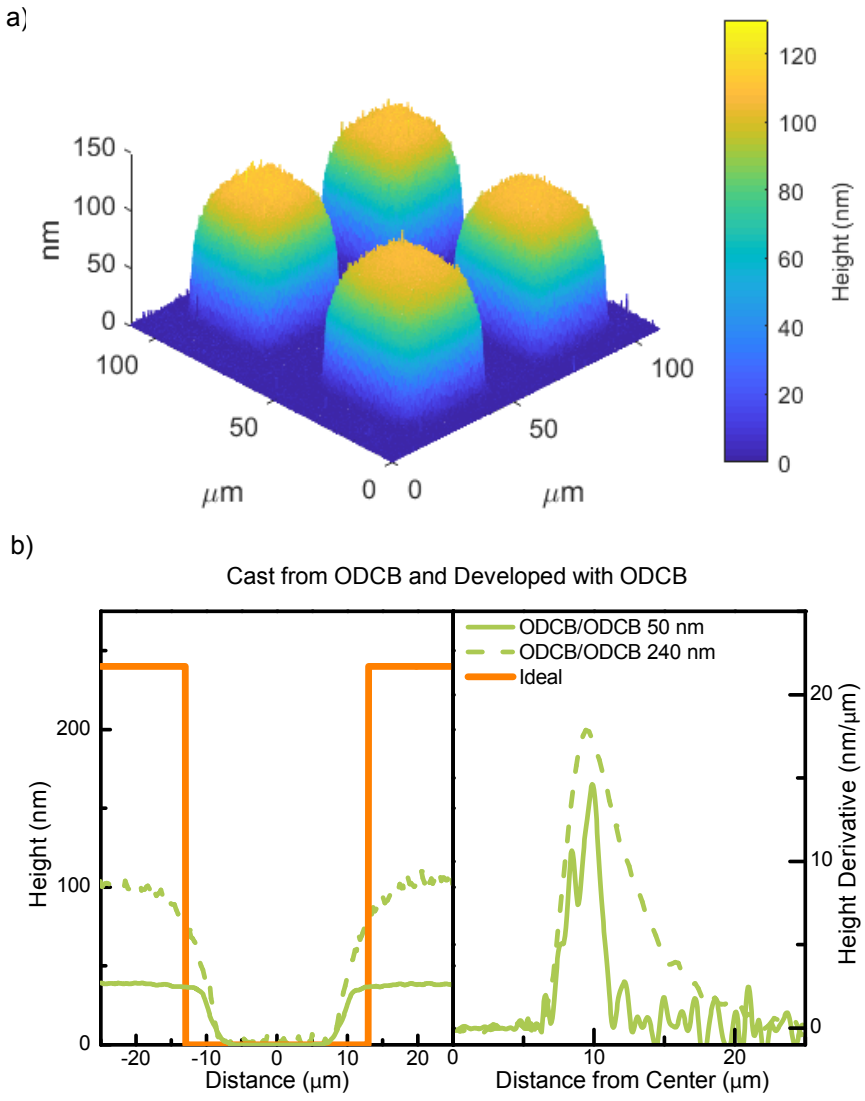

Fig. 11 *a) AFM tomography image of a P3HT film that was coated from ODCB to a thickness of 240 nm. The F4TCNQ was evaporated into the film and the film was developed using ODCB. b) Cross sectional images of the 240 nm sample and the 50 nm ODCB/ODCB sample on a nm scale (left) and normalized compared to the original film thicknesses.*

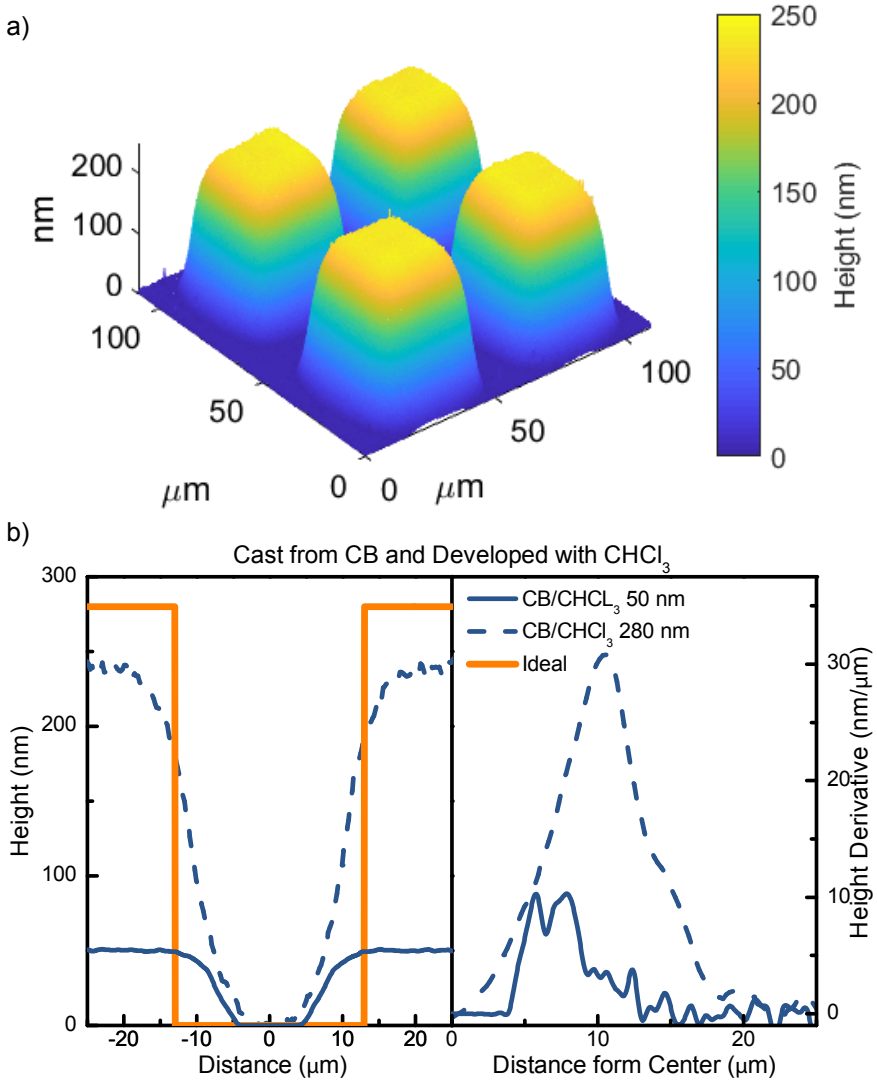

Fig. 12 *a) AFM tomography image of a P3HT film that was coated from CB to a thickness of 280 nm. The F4TCNQ was evaporated into the film and the film was developed using $CHCl_3$. b) Cross sectional images of the 280 nm sample and the 50 nm CB/$CHCl_3$ sample on a nm scale (left) and normalized compared to the original film thicknesses.*