Supplementary Materials: Mutual Effects of Hydrogen Bonding and Polymer Hydrophobicity on Ibuprofen Crystal Inhibition in Solid Dispersions with Poly(*N*-vinyl pyrrolidone) and Poly(2-oxazolines)

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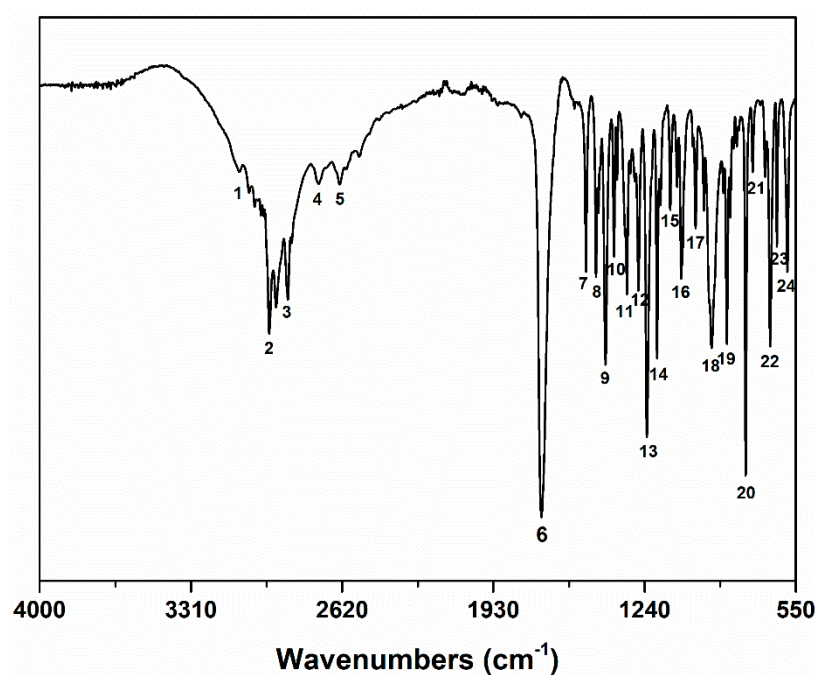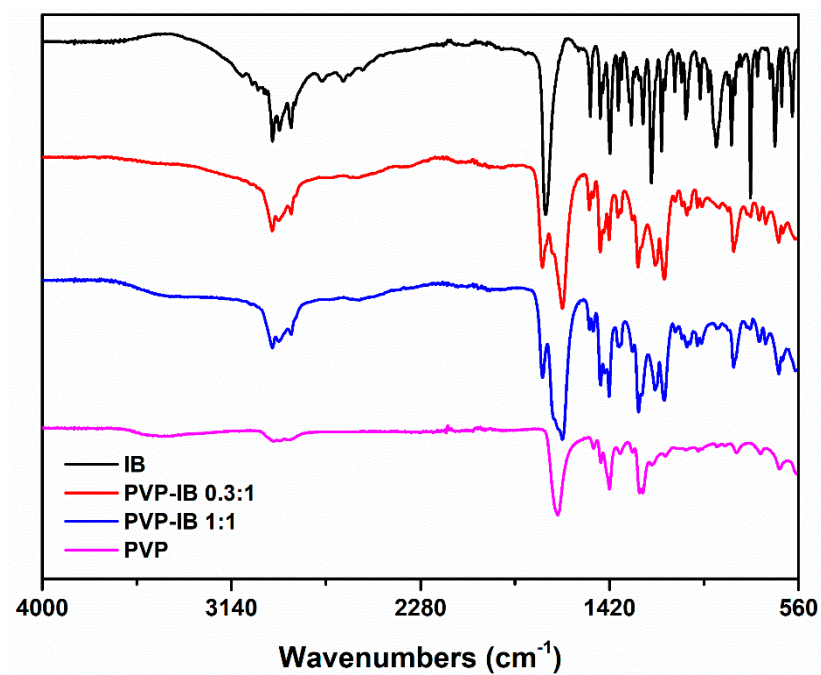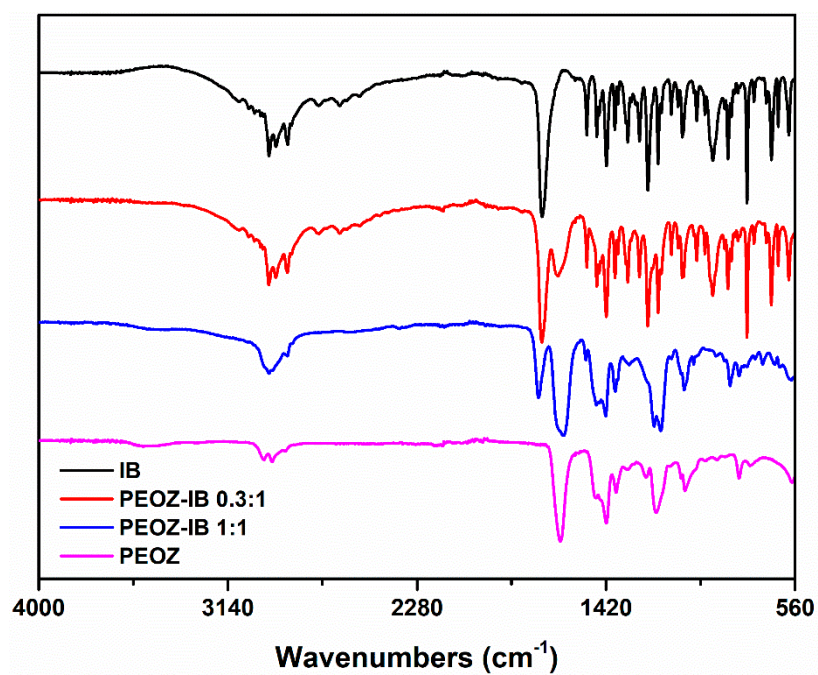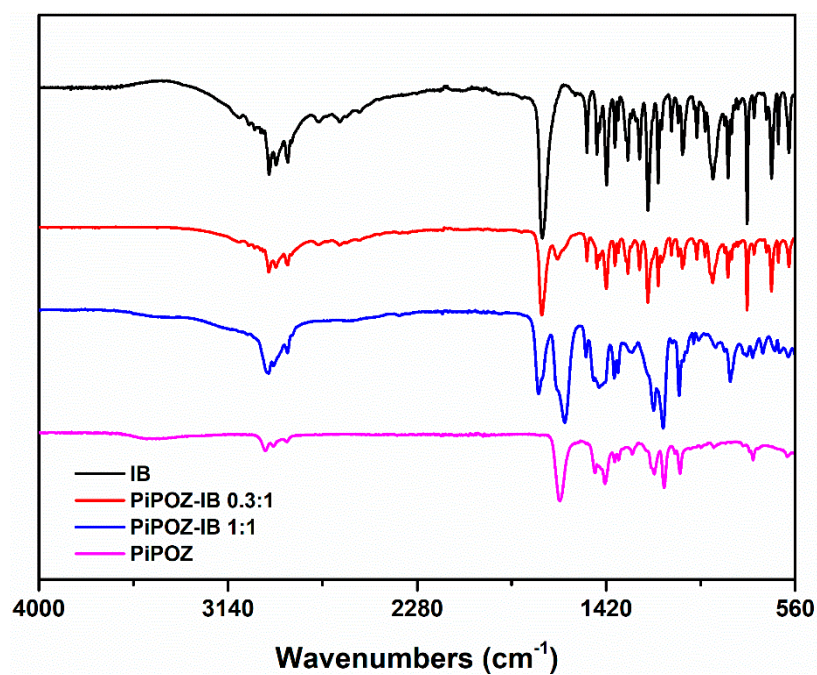

Figure S1. FTIR of ibuprofen.
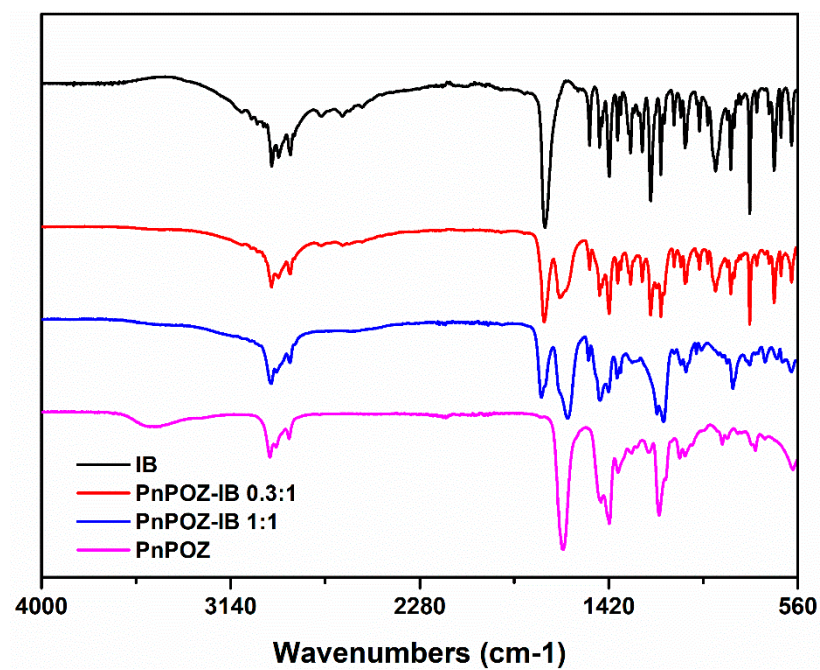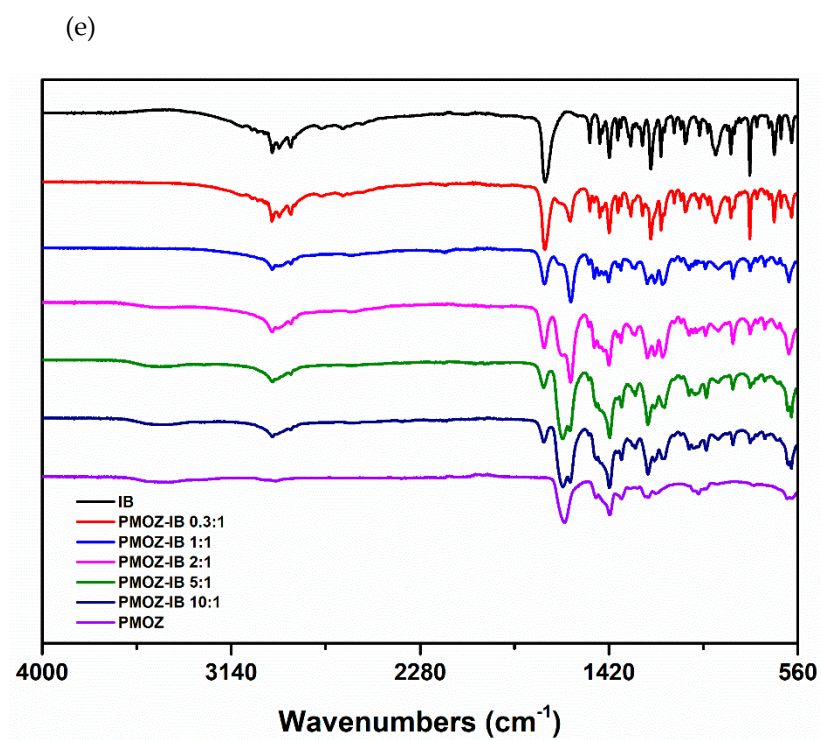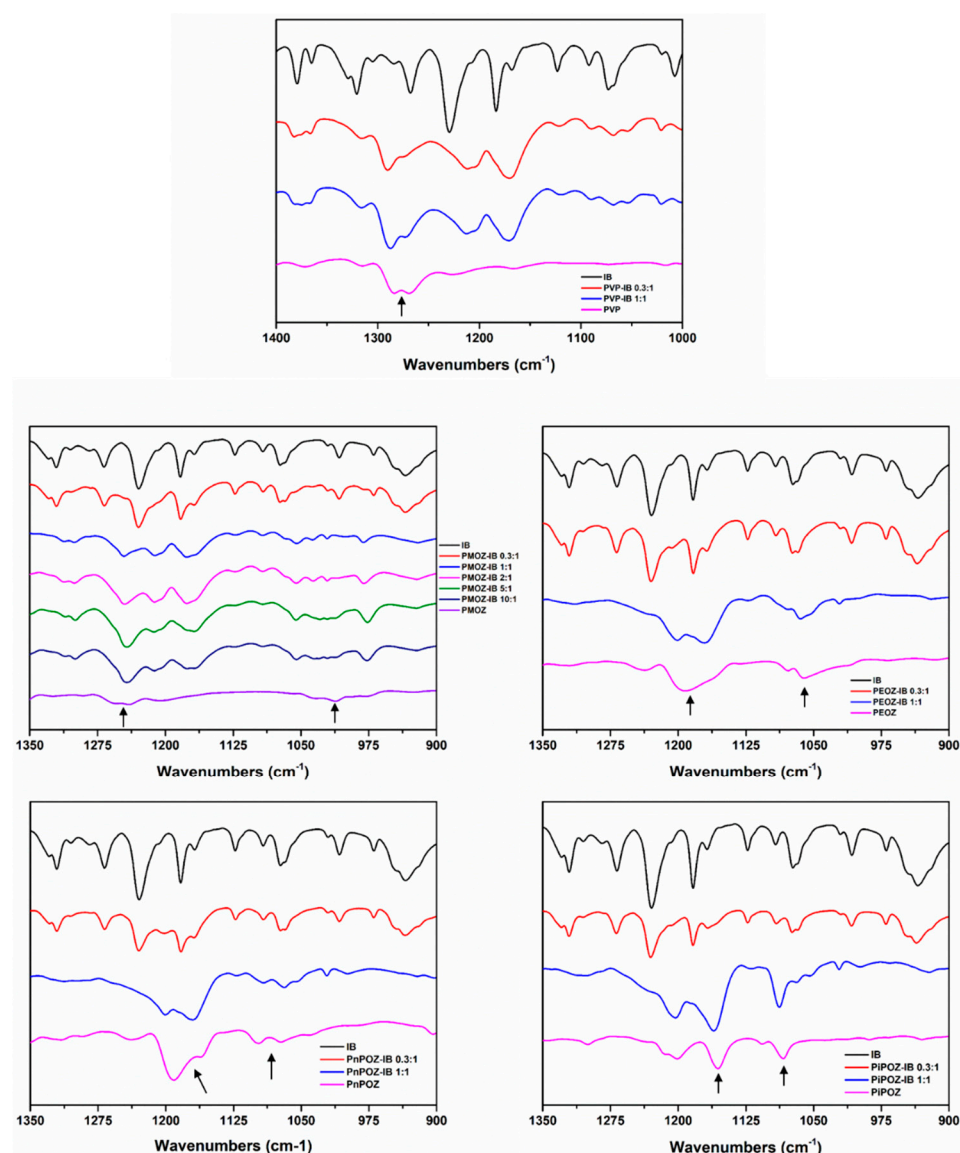
(a)

(b)

(c)

(d)

(e)

Figure S2. FTIR full spectra of PVP-IB SDs (**a**), PEOZ-IB SDs (**b**), PnPOZ-IB SDs (**c**), PiPOZ-IB SDs (**d**) and PMOZ-IB SDs (**e**).

Figure S3. FTIR spectra of PVP-IB SDs and POZ-IB SDs in the range of 1400~900 cm^{-1}. The peaks (marked with an arrow) are attributed to C–N mode.

Table S1. FTIR spectral data of ibuprofen (s- strong; w- weak; sym-symmetrical; asym-asymmetrical; str-stretching; m-medium; vs- very strong; vw – very weak.).

Band	Wavenumbers (cm $^{-1}$)	Assignments
1	3088 m	CH_2 asym str
2	2955 vs	CH_3 asym str
3	2869 m	CH_2 sym str
4	2725 m	O-H…O valence str
5	2633 m	O-H…O valence str
6	1710 vs	C=O str
7	1507 s	aromatic C=C str
8	1462 s	CH_3 asym deformation, CH_2 scissoring
9	1416 s	CH-CO deformation
10	1380 s	CH_3 sym str
11	1320 s	OH in plane deformation
12	1268 s	=C–H in plane deformation
13	1230 vs	C…C str
14	1183 s	C–O str

15	1123 w	=C–H in plane deformation
16	1071 m	=C–H in plane deformation
17	1008 m	C–H in plane deformation
18	936 s	CH_3 rocking vibration
19	866 s	C–H out of plane vibration
20	779 s	CH_2 rocking
21	746 w	C=C ring str, C...C skeletal vibration
22	668 s	C–H out of plane deformation
23	636 w	C–H in plane ring deformation
24	588 m	C...C deformation