Supplementary Information

Selective crystallization of D-mannitol polymorphs in water-isopropyl alcohol through swift cooling process

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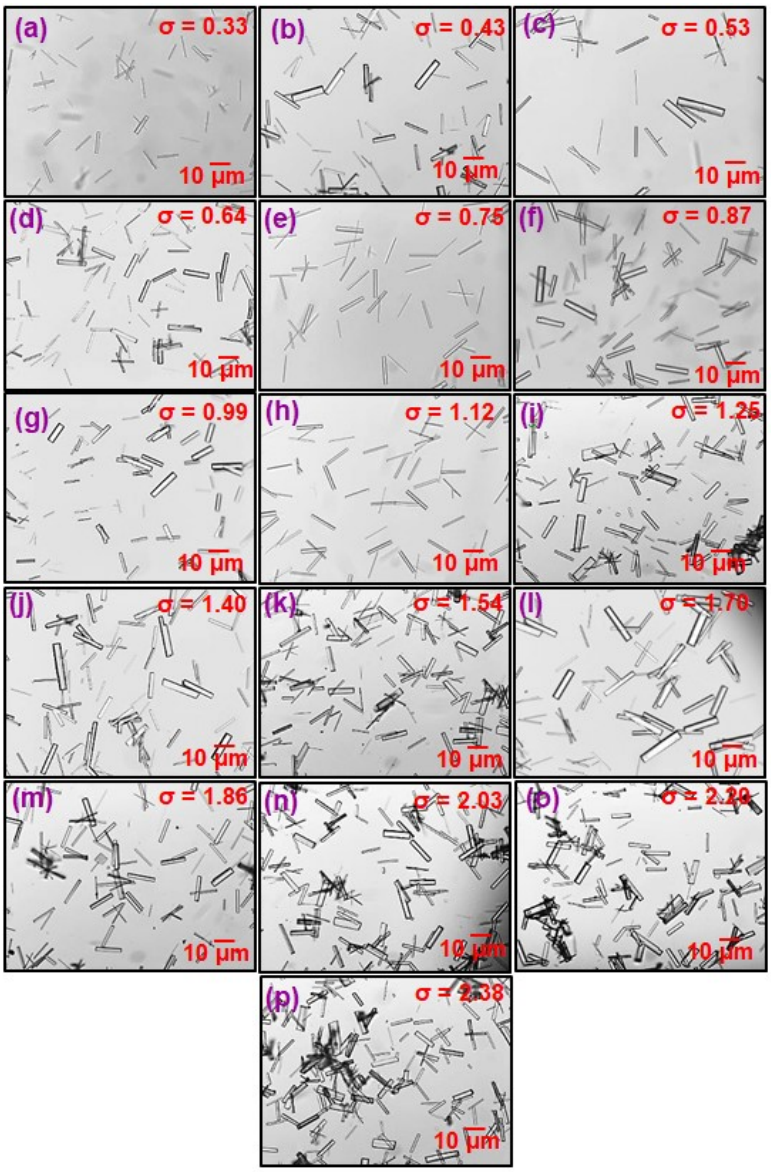

Fig. S1 (a–p) In-situ microscopic images showing nucleation of D-mannitol polymorph at low relative supersaturation σ = 0.33-2.38.

Table S1. Aspect ratio of crystals corresponding to different morphologies

Morphology	Aspect Ratio (L/W)
Needle (form I)	3
Thin needle (form II)	55.86
Thick needle (form III)	12.94

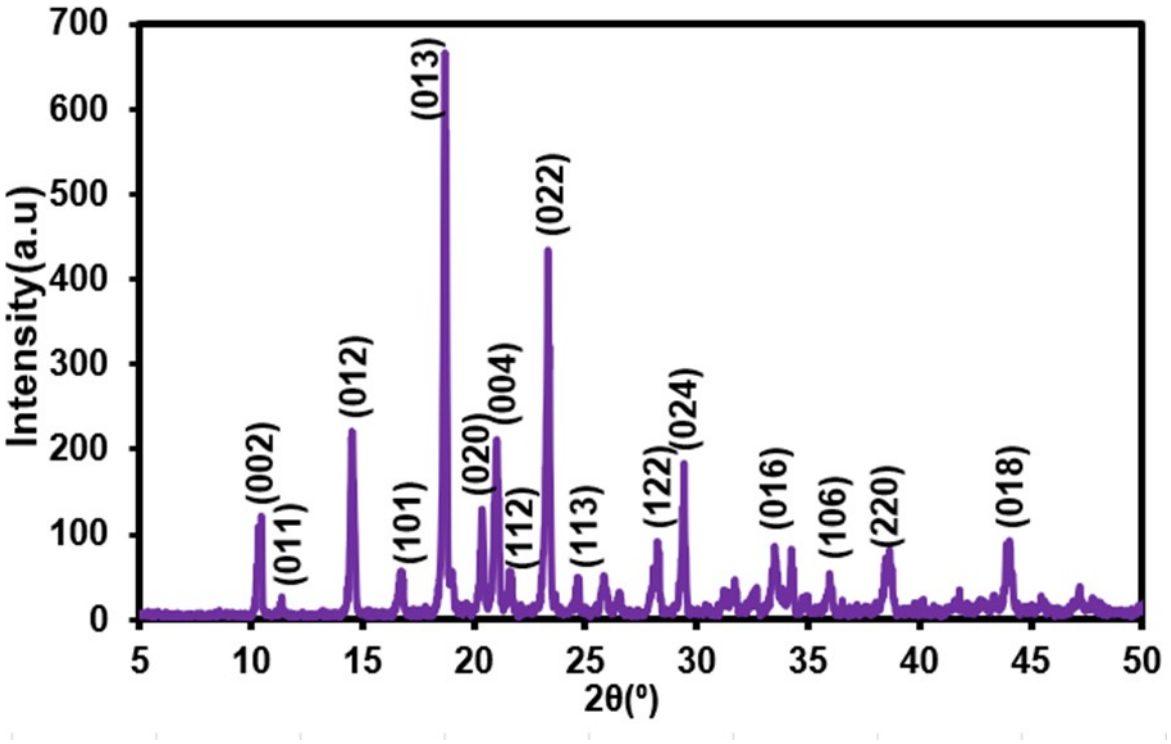

Fig. S2 PXRD pattern of the crystals obtained after the transformation, confirming the formation of form I.

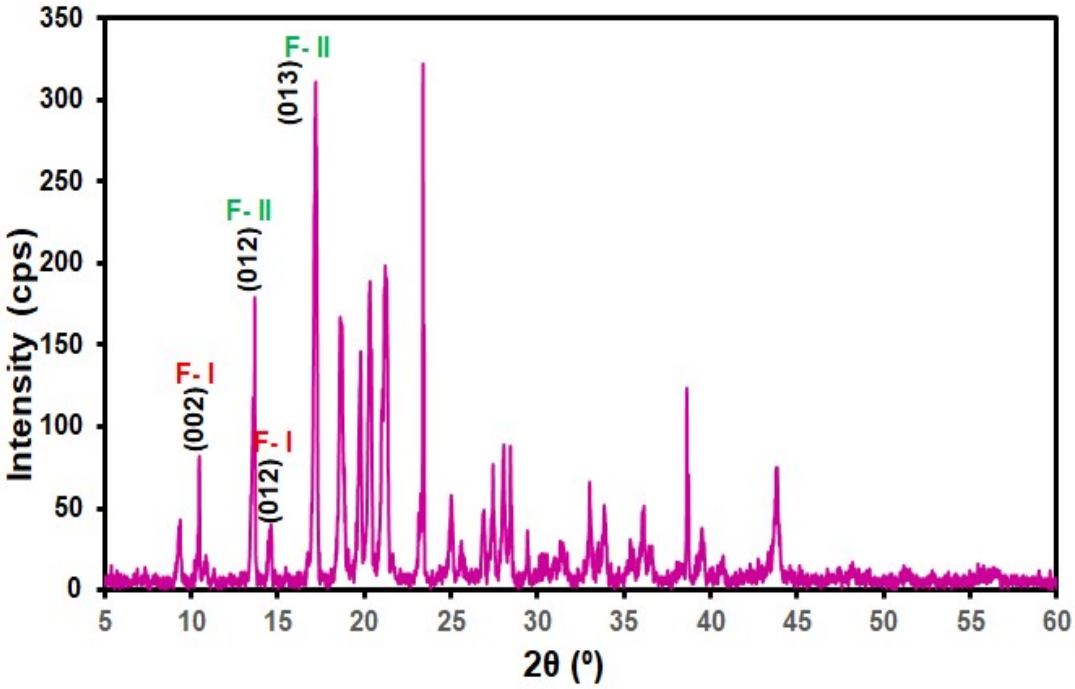

Fig. S3 PXRD pattern of concomitant nucleation of form I and form II polymorph. With the corresponding characteristic peak indicated with hkl of both forms.

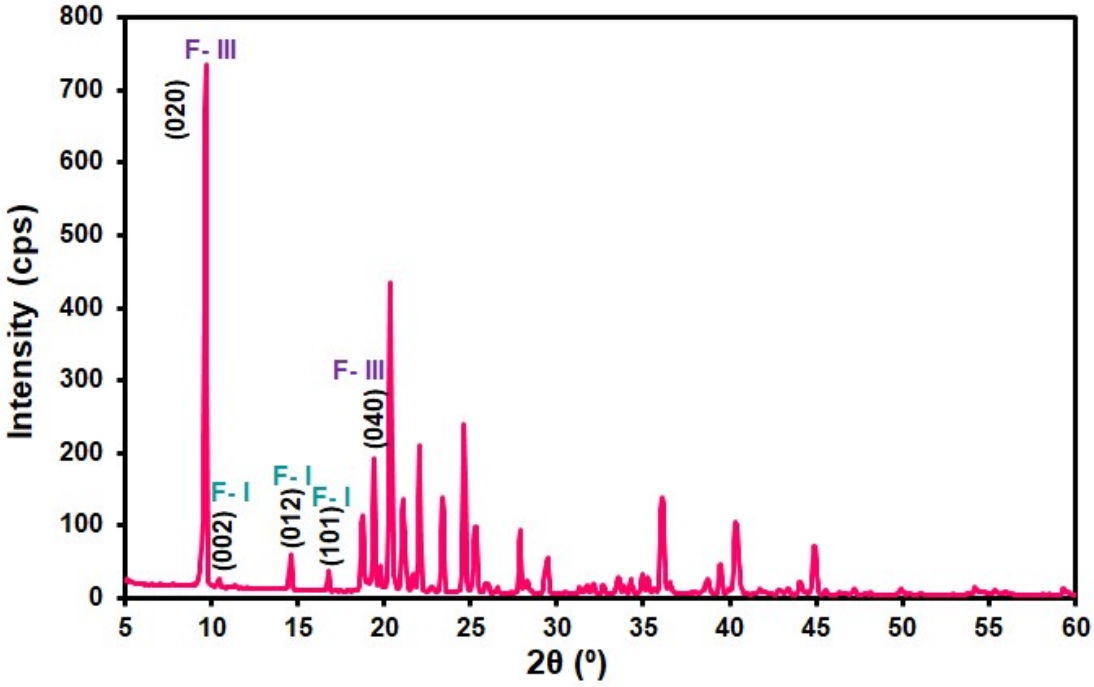

Fig. S4 PXRD pattern of concomitant nucleation of form I and form III polymorph. With the corresponding characteristic peak indicated with hkl of both forms.

Table S2. Lattice parameter values for the polymorphic forms of D-mannitol obtained in this work.

Lattice parameter	**Form I**		**Form II**		**Form III**	
	Literature value [21]	**Present work**	**Literature value** [21]	**Present work**	**Literature value** [21]	**Present work**
a (Å)	5.538	5.5101(6)	4.865	4.8984(5)	4.899	4.9122(23)
b (Å)	8.580	8.5820(9)	8.873	8.9709(10)	18.268	18.2682(19)
c (Å)	16.795	16.7906(12)	18.739	18.7251(17)	5.043	5.1166(21)
β (°)	90	90	90	90	118.39	118.40(4)
V ($Å^3$)	798.0	793.98(10)	809.0	822.83(10)	397.0	403.89(19)