Supplementary Information

Polymorphism and Particle Formation Pathway of Carbamazepine during Sonoprecipitation from Ionic Liquid Solutions

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Figure S1. ¹H-NMR of the synthesized ionic liquid, [BMIM][Cl].



Figure S2. Rietveld refinement of the freeze dried CBZ particles obtained without additives in the absence of sonication. The result shows that CBZ particles are mainly in Form III (95.6%) with minor traces of Form I (4.4%).



Figure S3. Time evolution raman spectra of CBZ during LAS precipitation from [BMIM][Cl] without additives and: (a) without ultrasound and (b) with ultrasound: (1) Form 1, (2) Form III, (3) DH, (4) 0 minute, (5) 1 minute, (6) 2 minute, (7) 3minute, (8) 4 minute, and (9) 5 minutes.



Figure S4. Time evolution raman spectra of CBZ during LAS precipitation from [BMIM][Cl] (A) BSA without ultrasound, (B) BSA with ultrasound, (C) HPMC without ultrasound, and (D) HPMC with ultrasound: (1) Form 1, (2) Form III, (3) DH, (4) 0 minute, (5) 1 minute, (6) 2 minute, (7) 3minute, (8) 4 minute, and (9) 5 minutes.



Figure S5. Time evolution raman spectra of CBZ during LAS precipitation from [BMIM][Cl] (A) PVP without ultrasound and, (B) PVP with ultrasound: (1) Form 1, (2) Form III, (3) DH, (4) 0 minute, (5) 1 minute, (6) 2 minute, (7) 3minute, (8) 4 minute, and (9) 5 minutes.



Figure S6. SEM micrographs of CBZ particles before freeze drying precipitated with BSA (a-d) without ultrasound and, (e-h) with ultrasound.



Figure S7. SEM micrographs of CBZ particles before freeze drying precipitated with PVP (a-d) without ultrasound and, (e-h) with ultrasound.



Figure S8. SEM micrographs of CBZ particles before freeze drying precipitated with HPMC (a-d) without ultrasound and, (e-h) with ultrasound.



Figure S9. SEM micrographs of freeze-dried CBZ particles precipitated with BSA (a-d) without ultrasound and, (e-h) with ultrasound.



Figure S10. SEM micrographs of freeze dried CBZ particles precipitated with PVP (a-d) without ultrasound and, (e-h) with ultrasound.



Figure S11. SEM micrographs of freeze dried CBZ particles precipitated with HPMC (a-d) without ultrasound and, (e-h) with ultrasound.