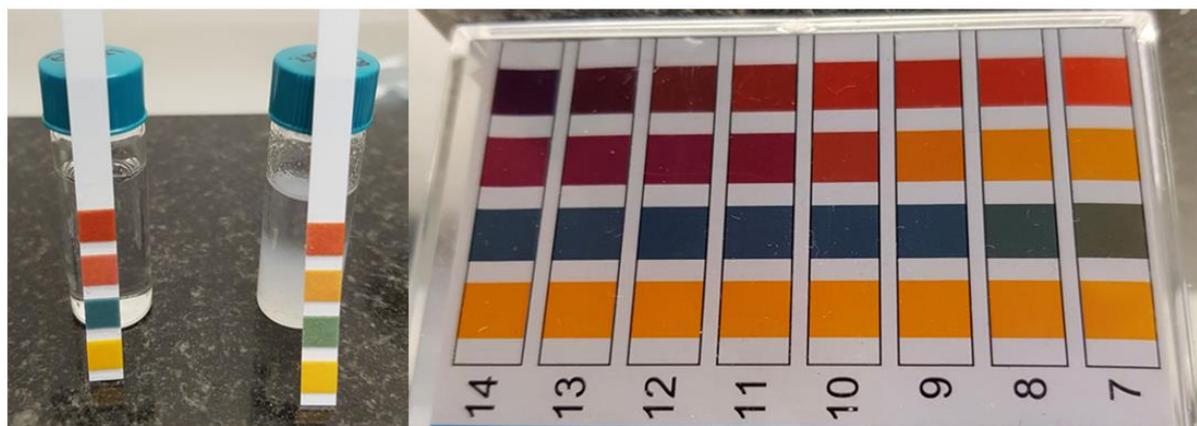


Supplementary Information

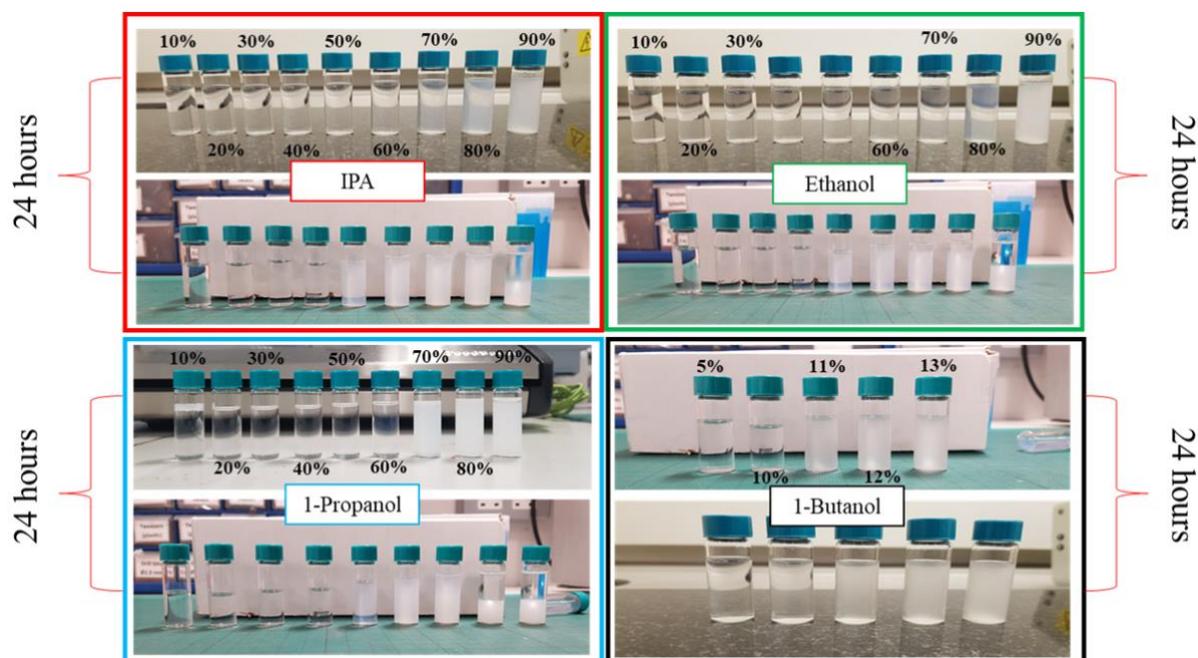
Predicting a process window for the roll-to-roll deposition of solvent engineered SnO₂ in perovskite solar cells

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S1. Images of SnO₂ nanoparticles precipitating out of solution when diluting with IPA. PH paper was used to show a change in pH from basic to neutral



S2. Images of SnO₂ nanoparticle formulations with added solvents. Solvents were added in volume% increments and the “hazy” colour is brought on from the nanoparticles precipitating out of solution. In addition to this, the formulations were photographed after 24 hours showing precipitation of stable solutions over time.

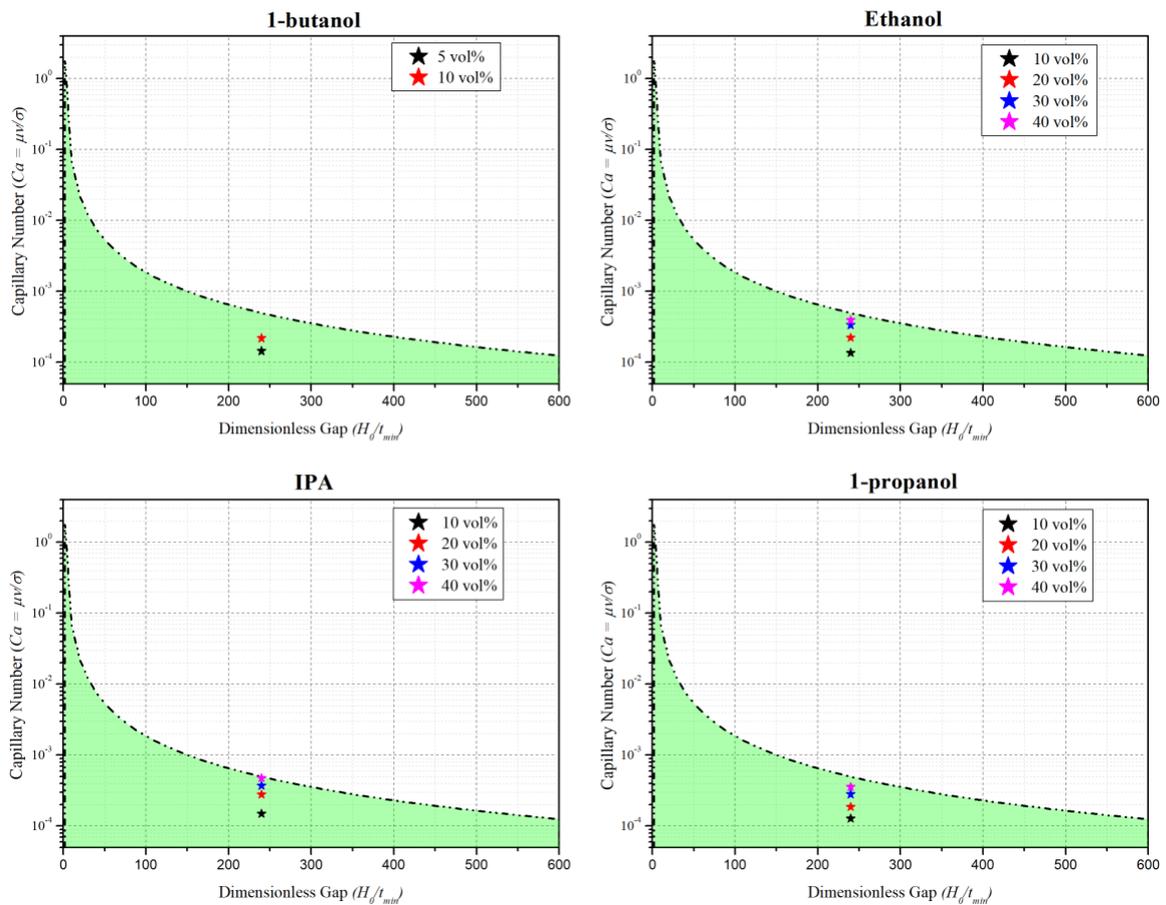
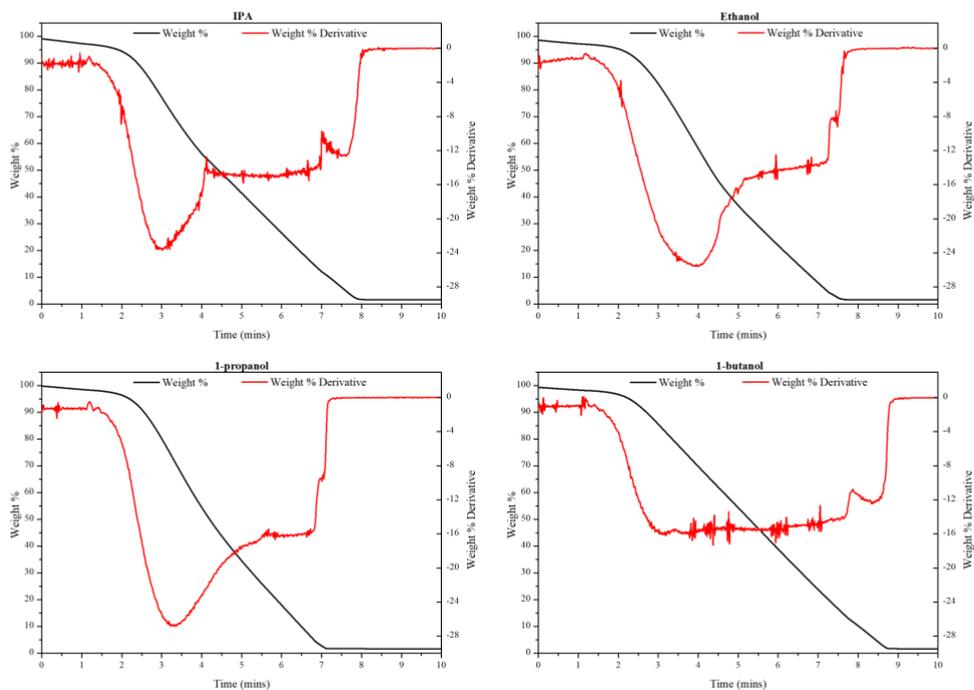


Figure S3 Low flow limit models for all four solvent systems of SnO₂ nanoparticle suspensions.



S4. TGA graphs showing the weight loss profile of each of the solvent formulations held at 140 °C. Weight derivatives were also calculated and plotted to represent separate mass loss occurrences.

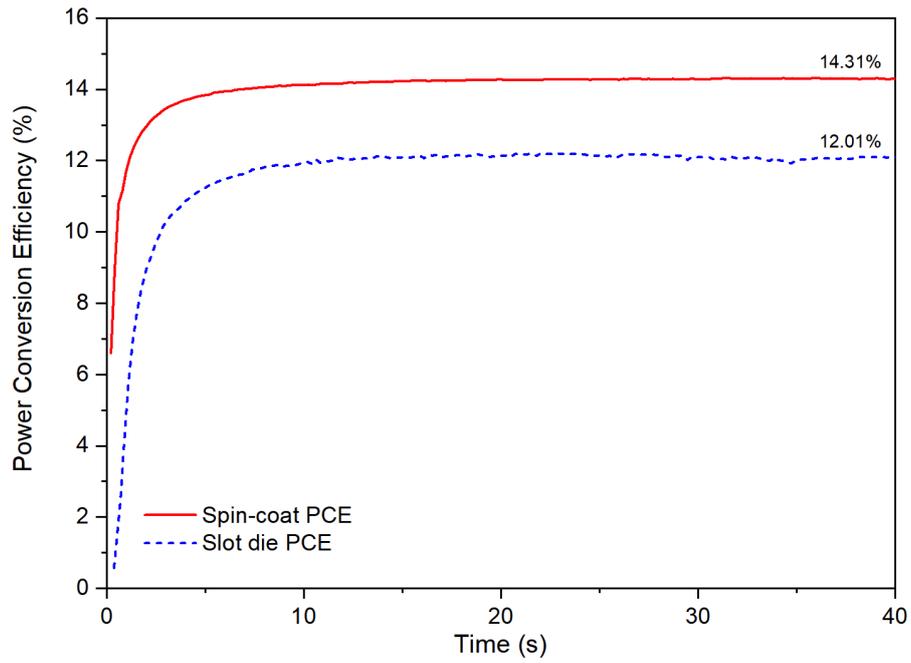
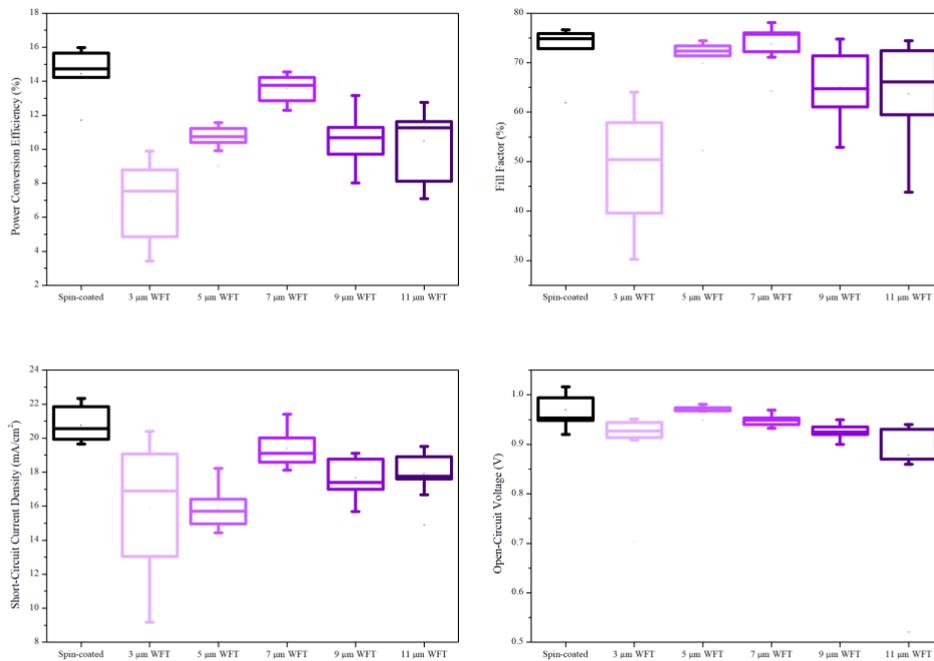


Figure S5. Stabilized efficiency measurements for sheet-to-sheet, slot-die coated SnO₂ ETL compared to the spin-coated reference.



S6. Statistical analysis of J-V data from the thickness optimisation of sheet to sheet slot-die coated tin oxide ETL using a 10 volume% 1-butanol solvent system (Reverse scans)