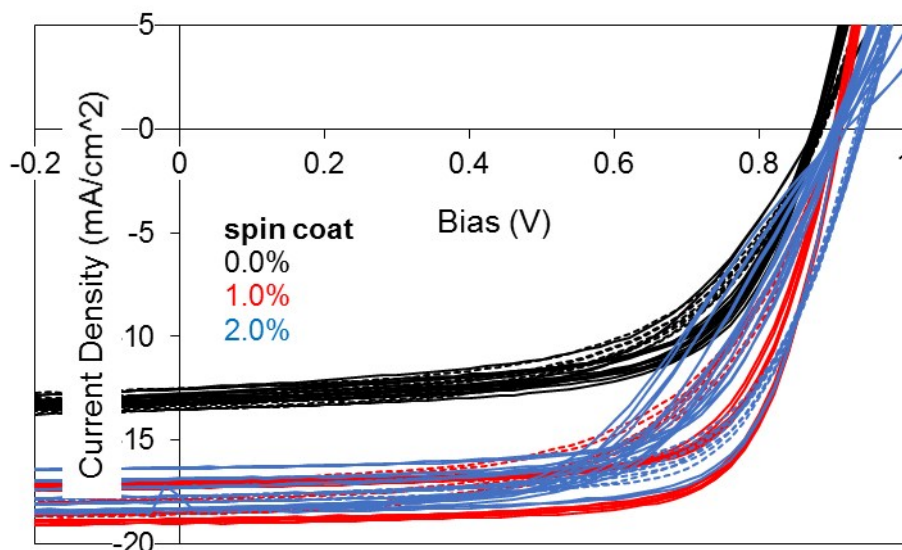
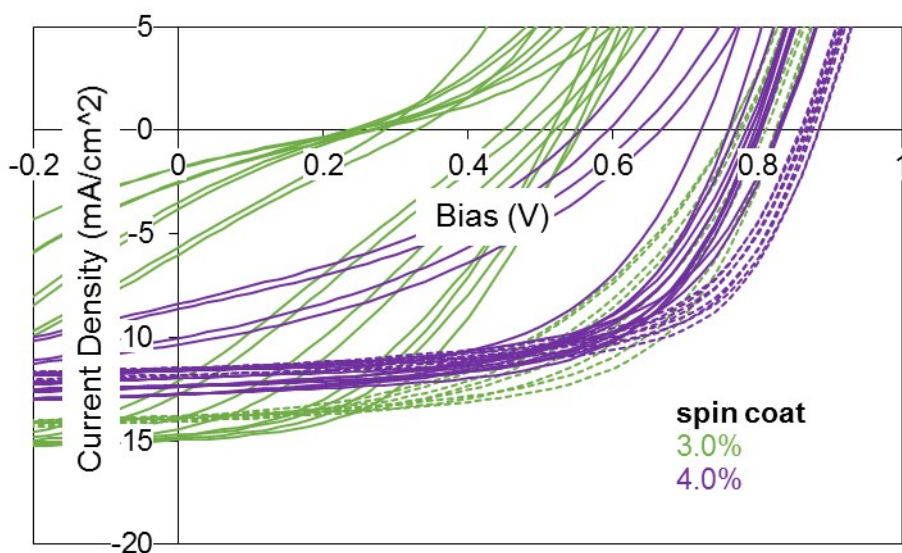


HI concentration v%	Perovskite film thickness (nm)	
	Spin-coated	Spray-coated
0	397 ± 15	311 ± 70
1	394 ± 11	330 ± 60
2	433 ± 12	331 ± 60
3	418 ± 13	572 ± 80
4	503 ± 25	459 ± 25

Table S1 – Post annealed film thickness of MAPbI_{3-x}Cl_x films spray-coated and spin-coated from precursor solutions containing different HI v% onto ITO/PEDOT measured at five different locations by profilometry.



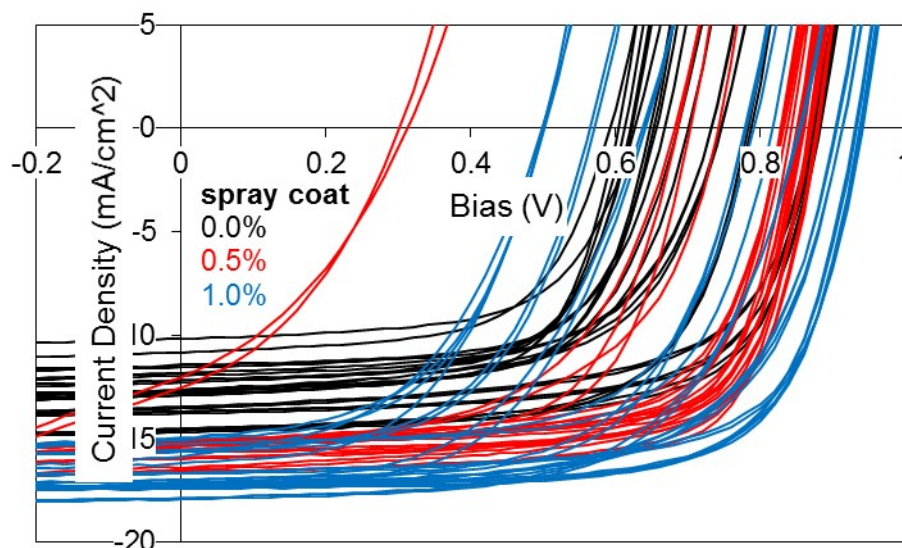
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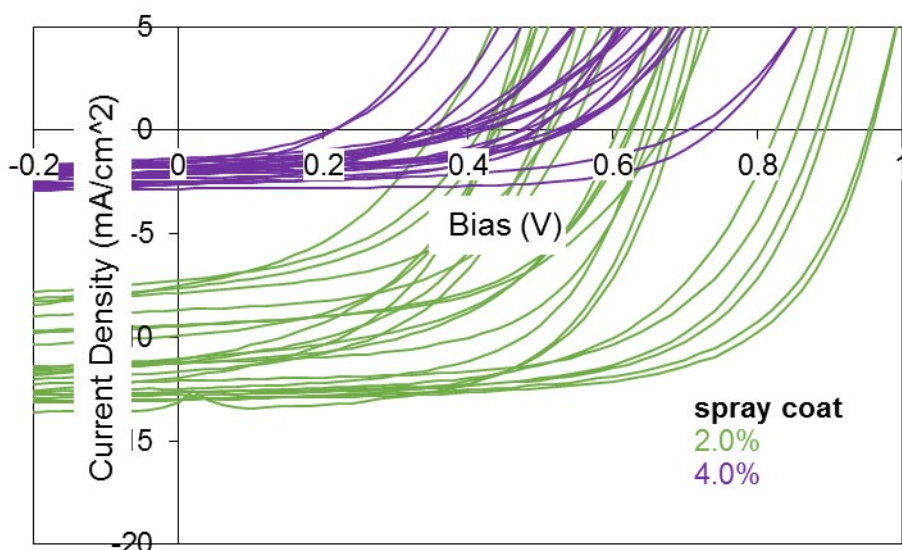
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27 **Figure S1** - The effect of HI concentration in spin-coated PSCs. PEDOT:PSS and PCBM layers
 28 are spin-coated. Solar cell J-V traces measured under 1Sun AM1.5G irradiation whilst cycling
 29 applied bias from -1V to +1V and back again.

30



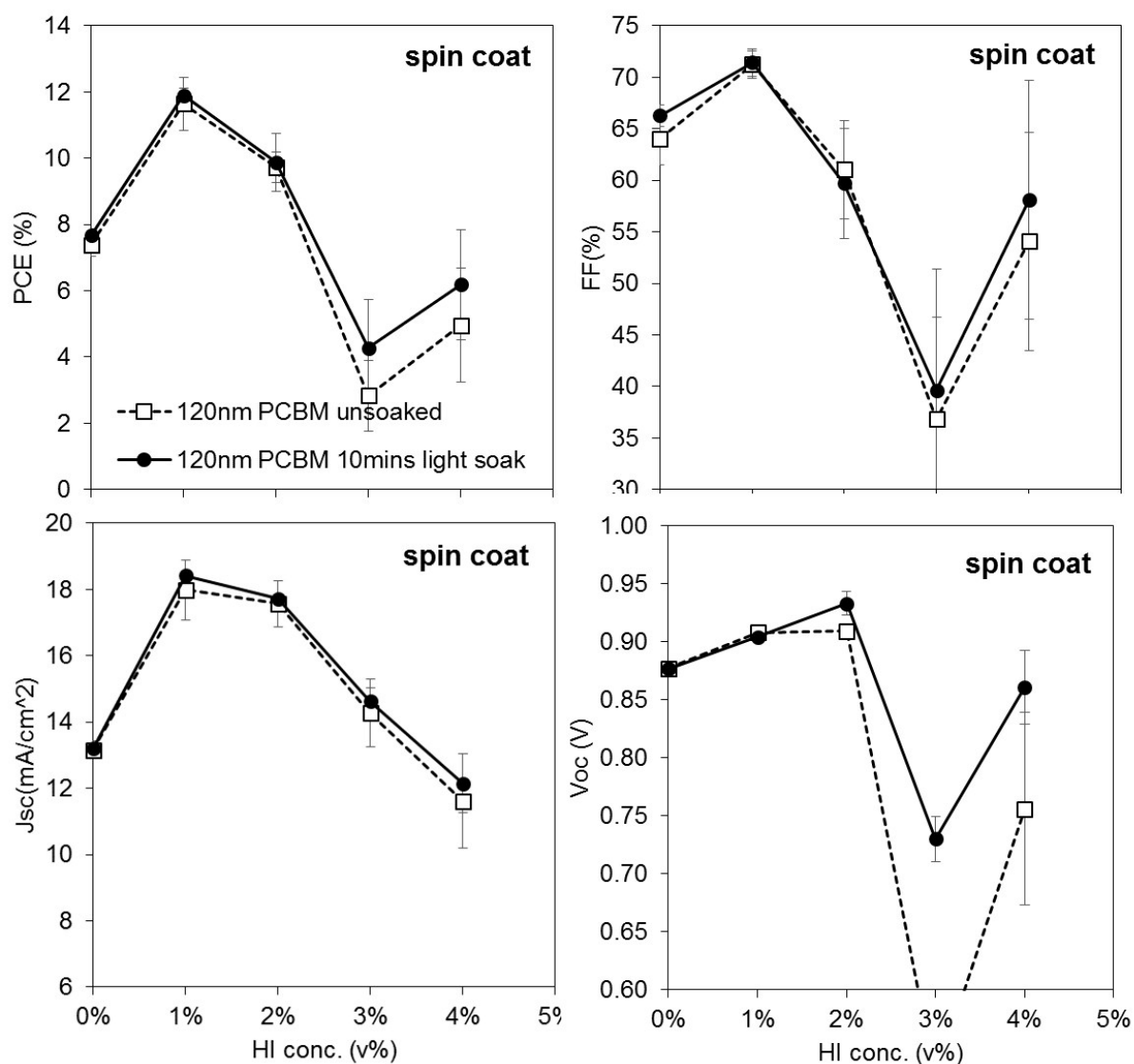
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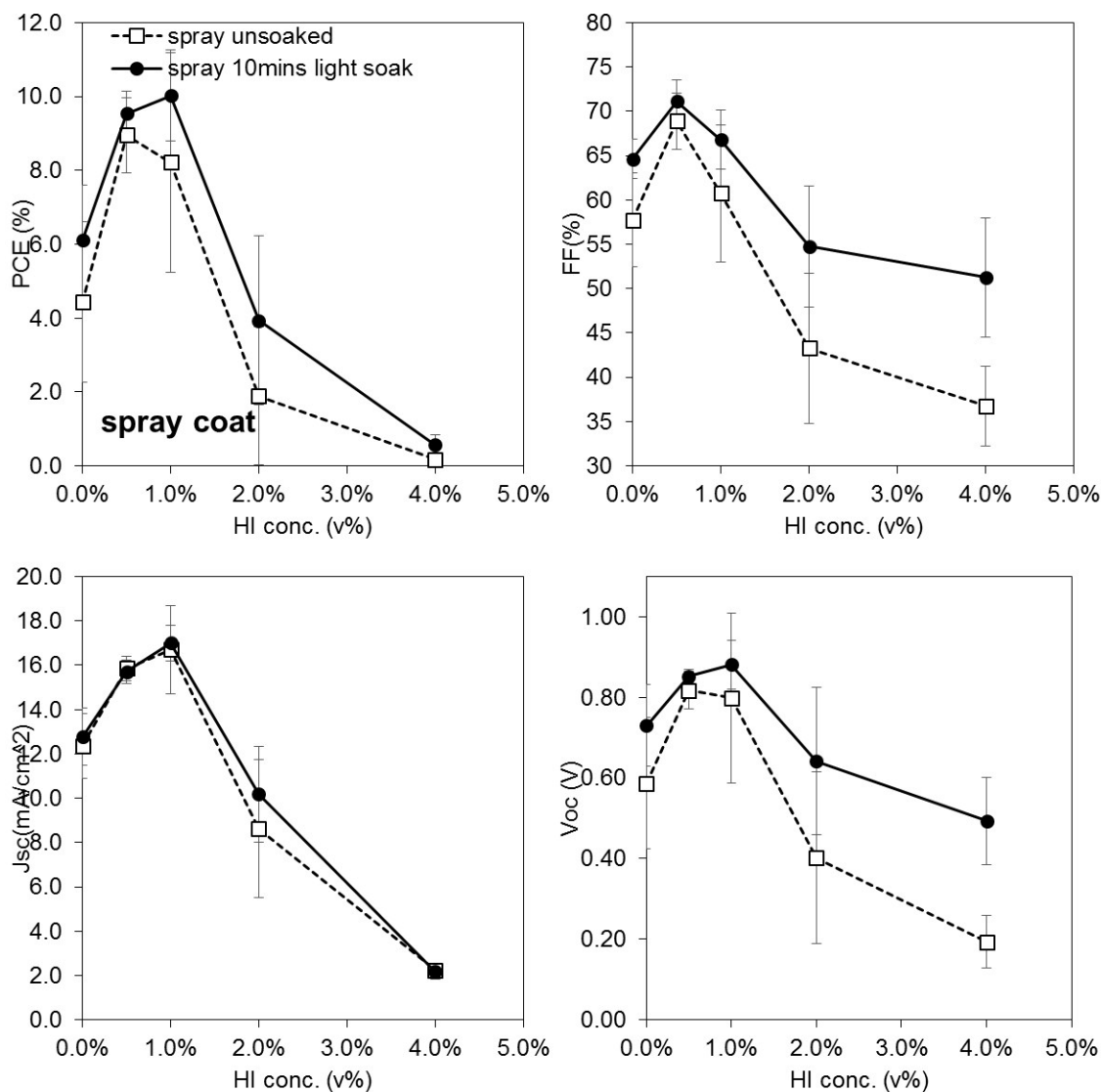
33 **Figure S2** - The effect of HI concentration in spray-coated PSCs. PEDOT:PSS and PCBM
 34 layers are spin-coated. Solar cell J-V traces measured under 1Sun AM1.5G irradiation whilst
 35 cycling applied bias from -1V to +1V and back again.

36



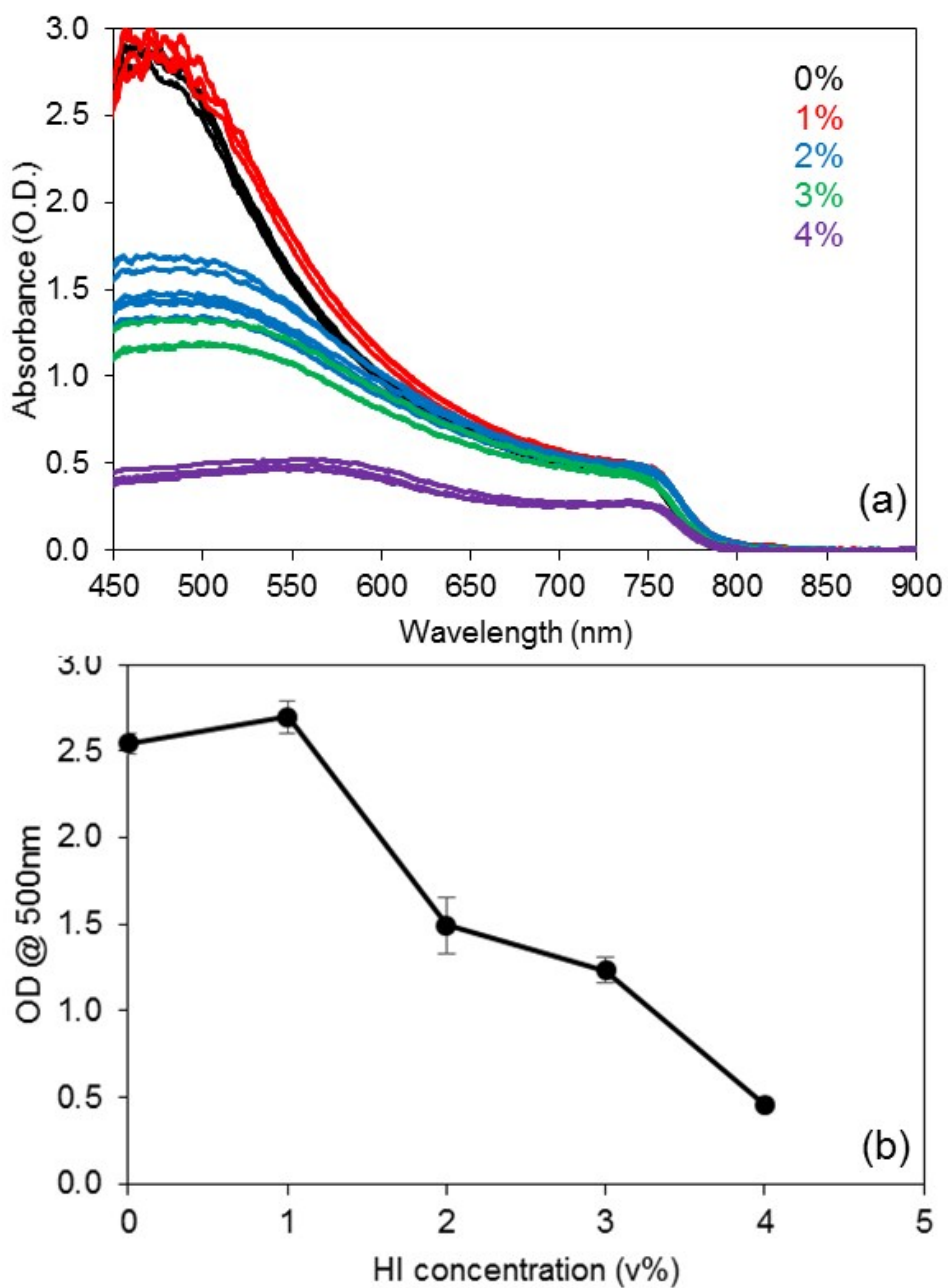
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38 **Figure S3** – The effect of HI concentration on performance metrics measured from spin-coated
 39 PSCs under 1Sun AM1.5 irradiation before (open squares) and after (closed circles) light
 40 soaking. Lines are a guide for the eye.



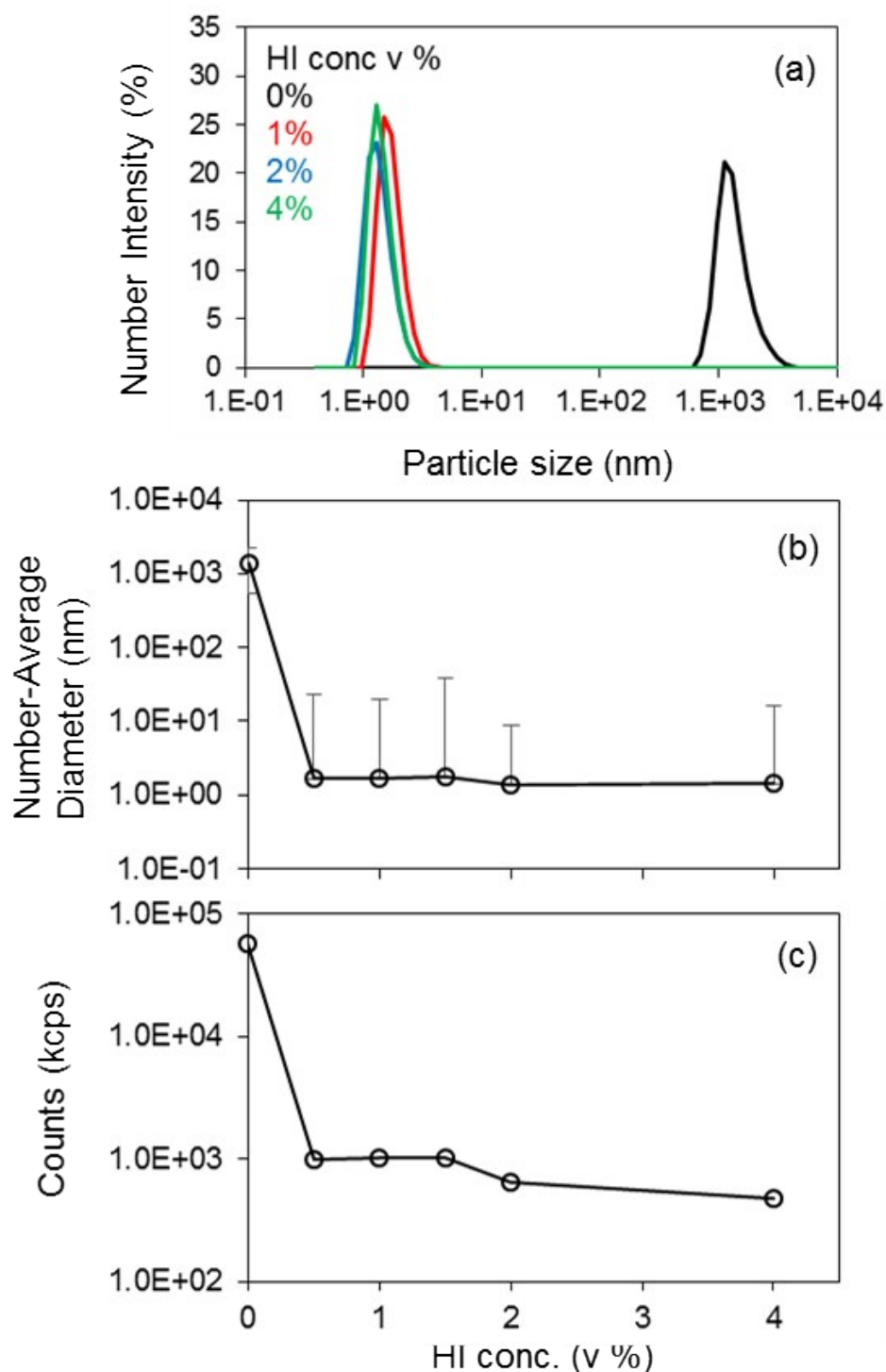
41

42 **Figure S4** – The effect of HI concentration on performance metrics measured from spray-
 43 coated PSCs under 1Sun AM1.5 irradiation before (open squares) and after (closed circles)
 44 light soaking. Lines are a guide for the eye.



45

46 **Figure S5** – Part (a): Absorption spectra measured from MAPbI_{3-x}Cl_x thin-films prepared on
 47 ITO/PEDOT surfaces with varying amounts of HI added to the precursor solution (*see* legend
 48 inset). Part (b): Summary of data from part (a) showing optical density at 500nm vs HI v%.



49

50 **Figure S6** – Part (a): size distribution of chloride-based aggregates measured by dynamic light
 51 scattering from precursor solutions, showing decrease in fitted particle size as the large
 52 aggregates which are initially present become dispersed and solvated as more HI is added; part
 53 (b): Fitted intensity-average aggregated diameter (lines are a guide to the eye). Note that these
 54 statistical fits attempt to interpret systems that may contain broad distributions of aggregate
 55 sizes. Furthermore, particle sizes inferred from samples containing more than 1% HI
 56 concentration are tentative due to the low overall scattering signal (part (c)).