Supporting Information

Mixed solvents for the optimization of morphology in solution-processed, inverted-type perovskite/fullerene hybrid solar cells

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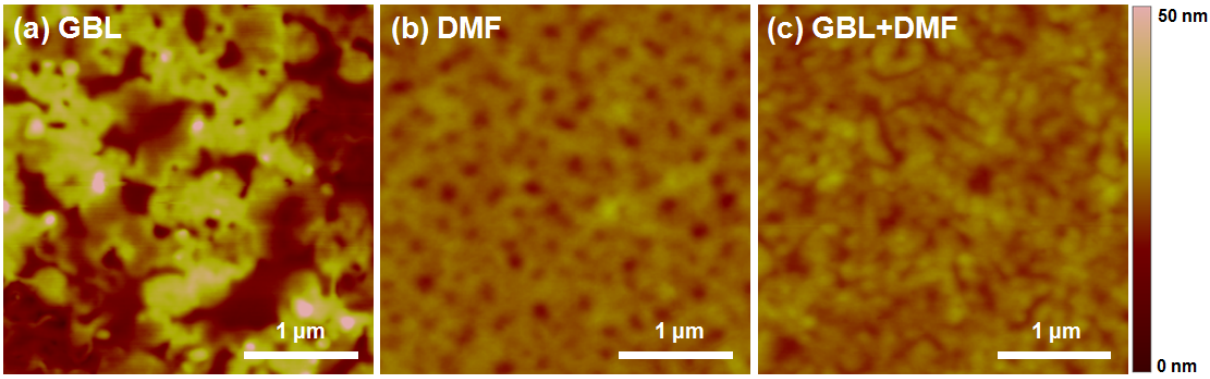

Figure S1. AFM topography images of PCBM films on top of $CH_3NH_3PbI_3$ perovskite layer prepared from different solvents.

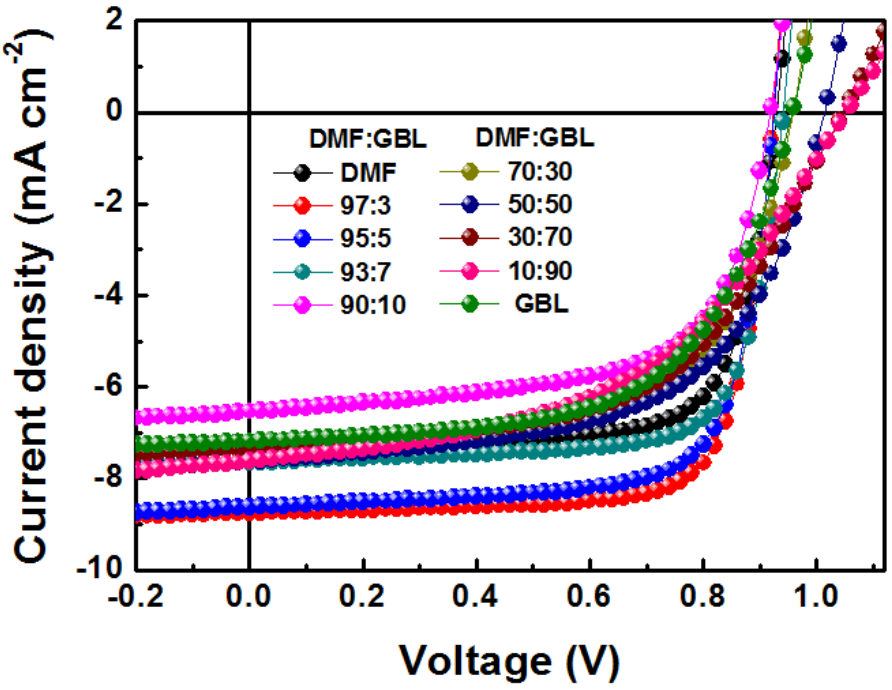

Figure S2. *J-V* curves of ipero-HSCs prepared from different solvents with various DMF:GBL ratio.

Table S1. Characteristics of ipero-HSCs prepared from different solvents with various DMF: GBL ratio.

Mixed solvent (DMF:GBL)[a]	J_{sc} (mA/cm^2)	V_{oc} (V)	*FF*	PCE (%)
Only DMF	**7.35**	**0.93**	**0.73**	**5.02**
97:3	**8.74**	**0.92**	**0.76**	**6.16**
95:5	**8.62**	**0.93**	**0.73**	**5.86**
93:7	**7.64**	**0.94**	**0.75**	**5.37**
90:10	**6.53**	**0.92**	**0.64**	**3.83**
70:30	**7.29**	**0.96**	**0.62**	**4.31**
50:50	**7.62**	**1.01**	**0.59**	**4.52**
30:70	**7.31**	**1.05**	**0.55**	**4.23**
10:90	**7.62**	**1.05**	**0.49**	**3.93**
Only GBL	**7.19**	**0.95**	**0.60**	**4.14**

[a] Volume ratio of DMF and GBL

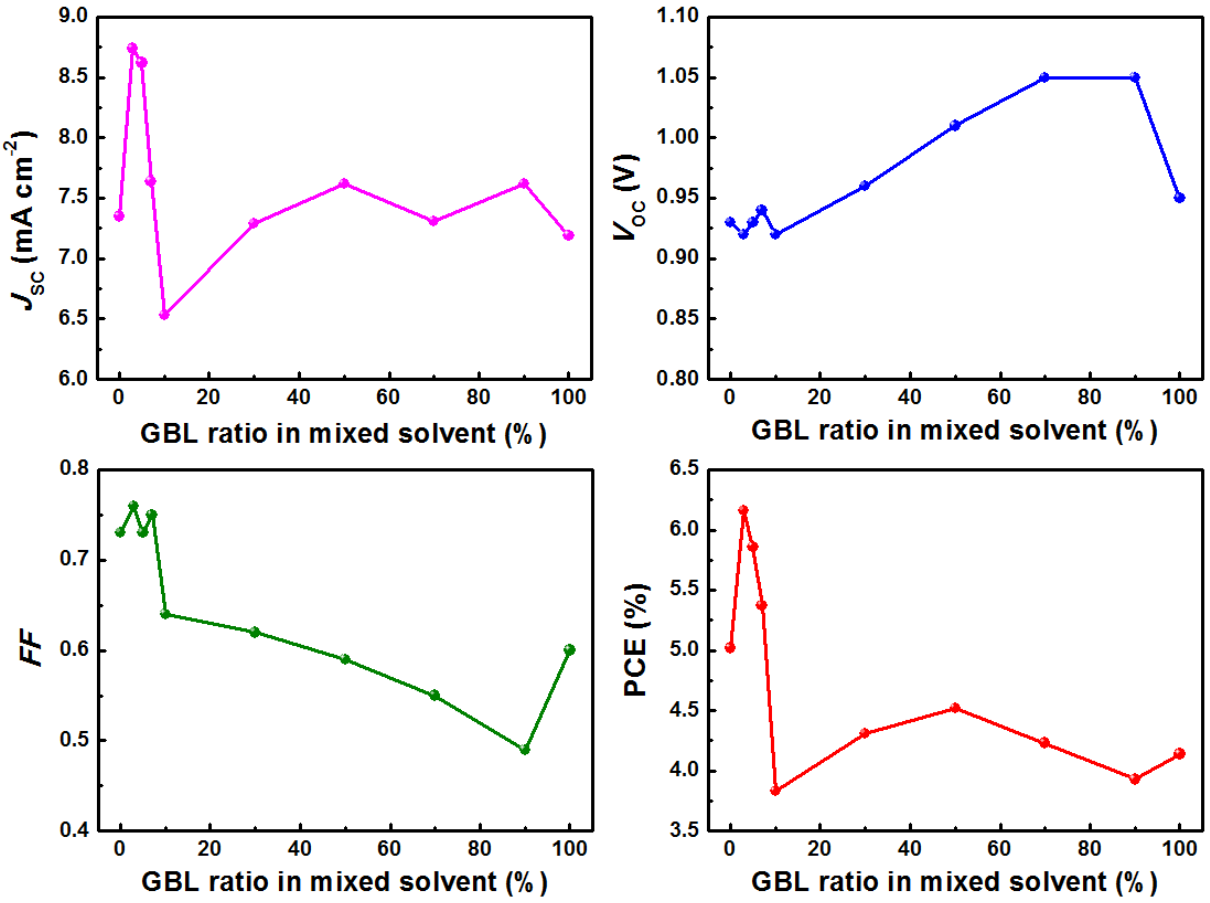

Figure S3. Dependence of photovoltaic parameters (J_{SC}, V_{OC}, *FF*, and PCE) on the amount of GBL in mixed solvent of DMF and GBL.