

## Electronic supplementary information

### Combining cellulose substrates and perovskites in sustainable solar cells is possible: a systematic literature review offering realistic solutions

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### Film preparation

Carboxymethyl cellulose (CMC) films were made using a 3% solution of carboxymethyl cellulose (Fisher Scientific) in deionized water. The solution was stirred at 600 rpm for 2 hours at room temperature on a magnetic stirrer. 60 gsm films were made by simple casting in 14.5 cm diameter glass petri dish lids and dried in open atmosphere for two days.

Cellulose nanocrystal (CNC) films were made using a 3% solution of sulfated cellulose nanocrystals (Celluforce) in deionized water. The solution was stirred at 600 rpm for 2 hours at room temperature on a magnetic stirrer. 60 gsm films were made by simple casting on 8.7 cm diameter plastic petri dishes and dried in open atmosphere for two days.

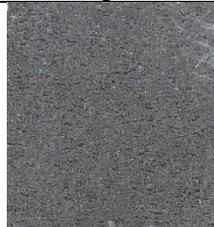
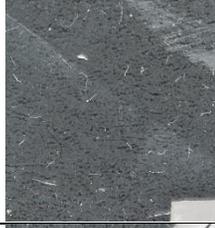
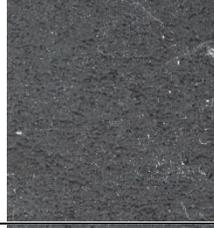
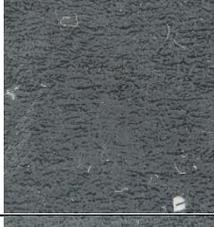
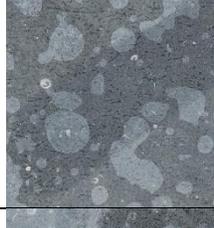
Cellulose acetate (CA) films were made using a 3% solution of CA powder (Sigma-Aldrich) in acetone. The solution was stirred at 600 rpm for 2 hours at room temperature on a magnetic stirrer. 60 gsm films were made by simple casting in 14.5 cm diameter glass petri dish lids that were placed in open plastic freezer bags and then left in a closed plastic box to dry for two days. Similar results were achieved by placing the glass petri dish lid in a closed freezer bag and leaving it to dry for a week.

Ethyl cellulose (EC) films were made using a 3% solution of EC powder (Sigma-Aldrich) in ethanol. The solution was stirred at 600 rpm for 2 hours at room temperature on a magnetic stirrer. 60 gsm films were made by simple casting in 14.5 cm diameter glass petri dish lids and dried in a closed plastic box for two days.

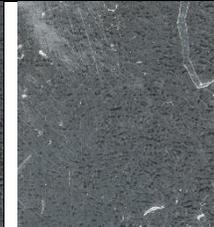
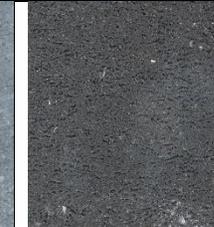
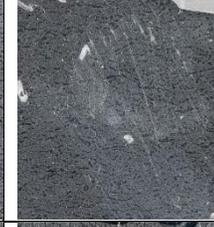
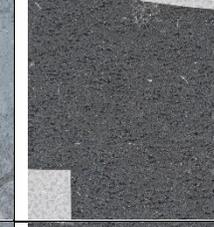
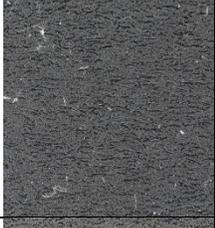
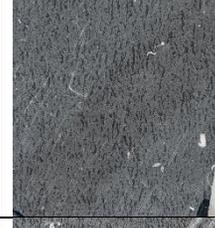
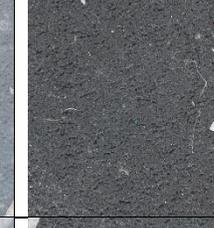
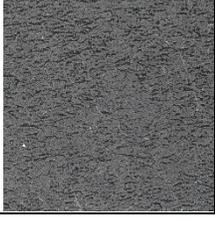
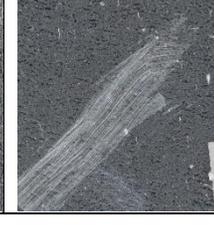
2-Hydroxyethyl cellulose (HEC) films were made using a 3% solution of HEC powder (Sigma-Aldrich) in deionized water. The solution was stirred at 600 rpm for 2 hours at room temperature on a magnetic stirrer. Films were made by simple casting in 14.5 cm diameter petri dish lids and dried in open atmosphere overnight.

## Electronic supplementary information

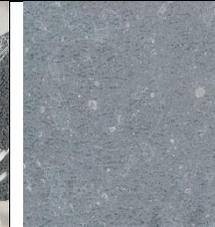
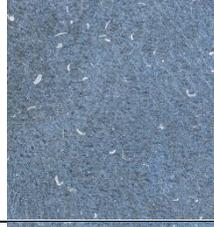
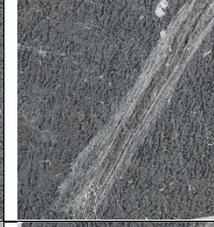
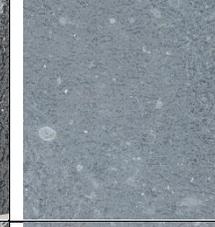
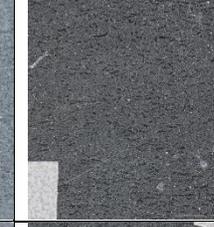
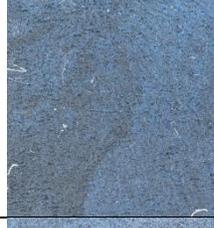
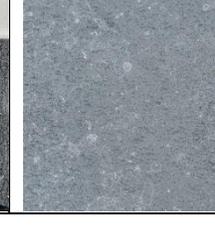
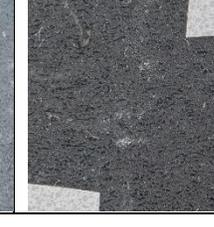
Table S1 Visual appearance of cellulose films after rubbing them with solvents used in PSC fabrication

	CMC	CNC	CA	EC	HEC	Cellophane
Neat films						
Water						
Ethanol						
Isopropanol						
Acetone						

**Electronic supplementary information**

Methanol						
GVL						
DMSO						
GBL						
DMF						

Electronic supplementary information

Chloroform						
Chlorobenzene						
1,2-Dichlorobenzene						
Toluene						
Diethyl ether						

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