Electronic Supplementary Material (ESI) for RSC Advances.

Hierarchical structured polymers for light-absorption enhancement of silicon-based solar power systems

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Supporting Information

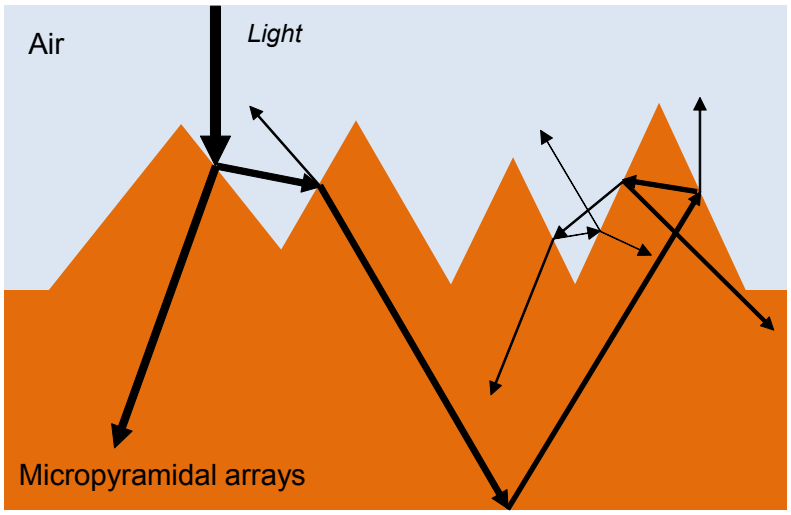

Fig. S1 Schematic diagram of the mechanism for the extension of effective optical path lengths in micropyramidal arrays.

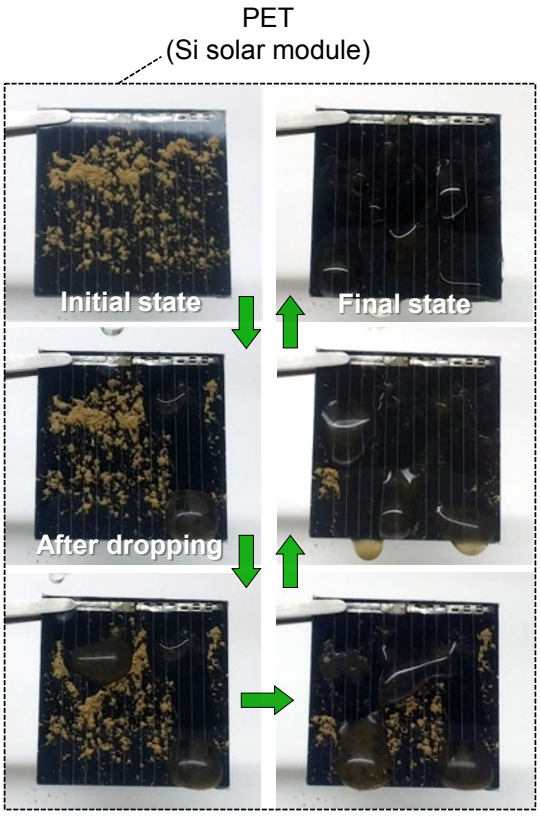

Fig. S2 Sequential photographs for a cleaning behaviour of the reference Si solar module with the bare PET cover by water droplets.

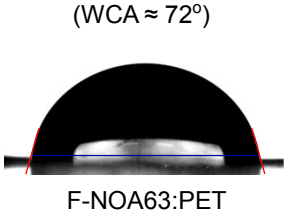

Fig. S3 Photograph of a water droplet on the surface of the flat NOA63 film:PET (F-NOA63:PET).

Table S1. Average total transmittance (T_{avg}) and solar weight transmittance (T_{sw}) of HS-NOA63:PET samples for different RHS-PDMS stamps via one HS-Si mold.

		HS-Si mold				
Stamp		RHS-PDMS (No.1)	RHS-PDMS (No.2)	RHS-PDMS (No.3)	RHS-PDMS (No.4)	RHS-PDMS (No.5)
HS-NOA63:PET (No.1)	T_{avg} (%)	94.04[(a)]±0.17[(b)]	94.10±0.01	94.06±0.02	94.06±0.11	94.03±0.04
	T_{sw} (%)	94.20±0.19	94.21±0.01	94.19±0.02	94.17±0.12	94.13±0.03
HS-NOA63:PET (No.2)	T_{avg} (%)	94.16±0.04	94.17±0.21	93.96±0.07	94.00±0.10	93.87±0.11
	T_{sw} (%)	94.26±0.03	94.27±0.19	94.09±0.06	94.10±0.09	94.00±0.11
HS-NOA63:PET (No.3)	T_{avg} (%)	93.96±0.18	93.98±0.09	94.13±0.08	93.94±0.02	93.99±0.06
	T_{sw} (%)	94.05±0.20	94.11±0.10	94.24±0.08	94.05±0.01	94.10±0.05
HS-NOA63:PET (No.4)	T_{avg} (%)	94.05±0.02	94.02±0.07	93.97±0.13	93.76±0.11	93.93±0.08
	T_{sw} (%)	94.20±0.01	94.18±0.06	94.06±0.15	93.86±0.08	94.04±0.10
HS-NOA63:PET (No.5)	T_{avg} (%)	93.95±0.15	94.01±0.14	94.03±0.16	93.82±0.07	94.09±0.04
	T_{sw} (%)	94.03±0.15	94.20±0.15	94.16±0.16	93.90±0.05	94.18±0.03
HS-NOA63:PET (No.6)	T_{avg} (%)	93.90±0.16	-	-	-	-
	T_{sw} (%)	94.01±0.16				
HS-NOA63:PET (No.7)	T_{avg} (%)	93.87±0.27	-	-	-	-
	T_{sw} (%)	93.96±0.30				
HS-NOA63:PET (No.8)	T_{avg} (%)	93.77±0.19	-	-	-	-
	T_{sw} (%)	93.88±0.20				
Average value for each stamp	T_{avg} (%)	93.94±0.15	94.06±0.14	94.03±0.11	93.96±0.12	93.98±0.09
	T_{sw} (%)	94.05±0.16	94.19±0.12	94.14±0.11	94.06±0.12	94.09±0.09

From one HS-Si mold, five HS-NOA63:PET samples or more for each RHS-PDMS stamp were fabricated in the same fabrication process. The transmittance spectra of all the HS-NOA63:PET samples were measured at two or three times in a wavelength range of 380-1100 nm.

(a): Average value, (b): Standard deviation in parentheses