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Supporting Information

Realizing a colorful polymer solar cell with high color purity via a metal alloy-dielectric-metal alloy electrode

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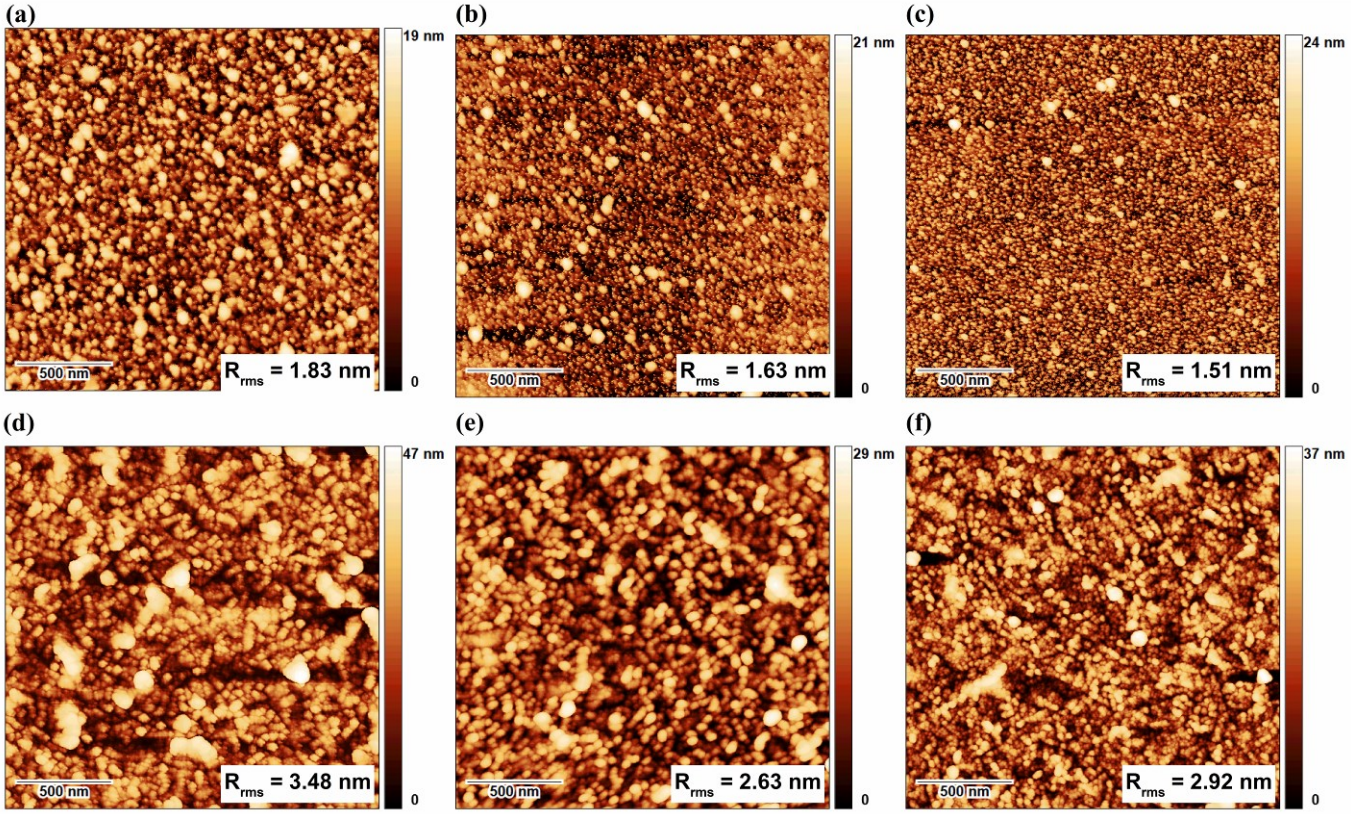

Fig. S1 The film morphology of 30 nm metal film (a) Ag, (b) Cu:Ag, (c) Al:Ag deposited on 7 nm MoO_3 and (d) Ag, (e) Cu:Ag, (f) Al:Ag deposited on 75 nm HAT-CN.

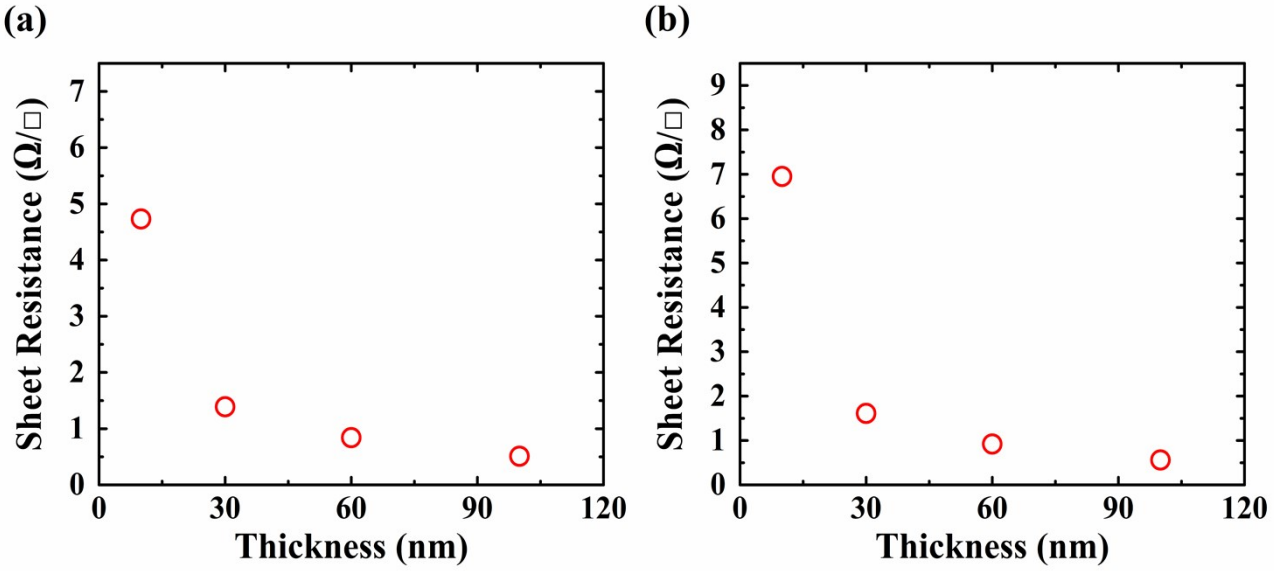

Fig. S2 The sheet resistance *vs* thickness of Al:Ag was deposited on (a) MoO_3 and (b) HAT-CN.

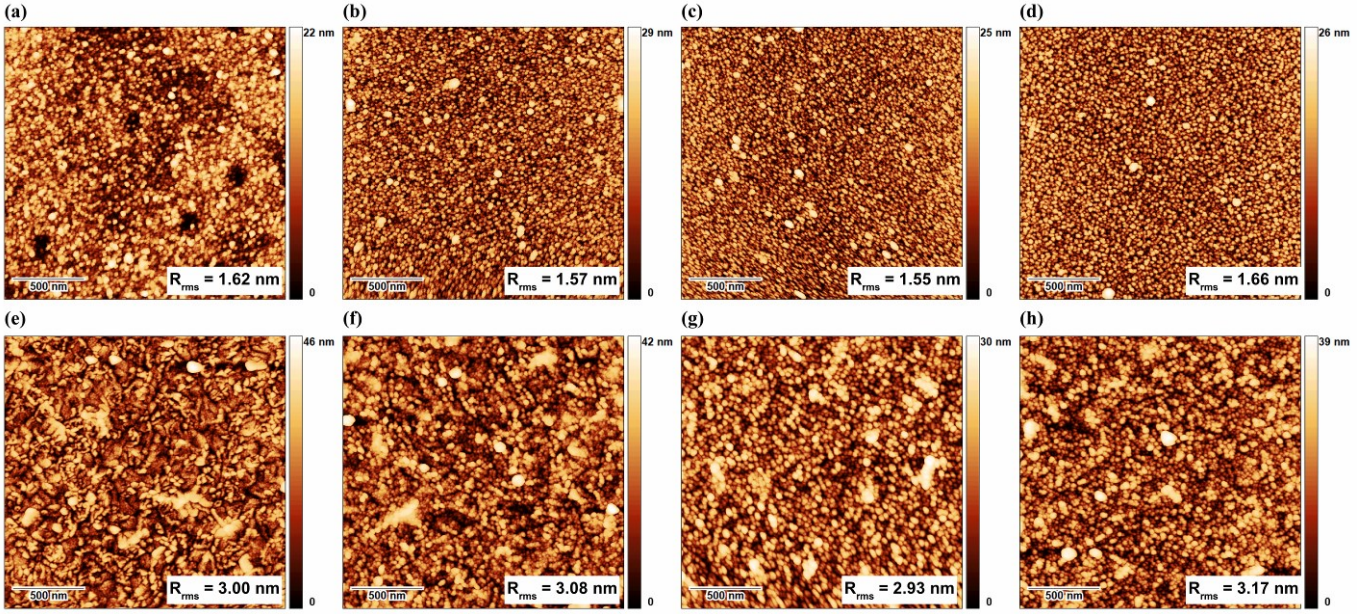

Fig. S3 The different thickness of Al:Ag for (a) 10 nm, (b) 30 nm, (c) 60 nm, (d) 100 nm deposited on 7 nm MoO_3 and (e) 10 nm, (f) 30 nm, (g) 60 nm and (h) 100 nm deposited on 75 nm HAT-CN.

Table S1 Summary on transmissive colorful solar cells with various FP structures

Structure	Electrode	Highest PCE (%)	Ref
ITO/PEDOT:PSS/MoO_3/DTDCPB/DTDCPB:C_{70} /C_{70}/Bphen	Ag/NPB/Ag	5.15%	42
ITO/PEDOT:PSS/PTB7-Th:$PC_{71}BM$/ZnO/Sb_2O_3	Ag/Sb_2O_3/Ag	7.03%	43
ITO/PEDOT:PSS/PTB7-Th:IEICO-4F/ZnO/Ag	Sb_2O_3/Ag/Sb_2O_3	7.88%	44
ITO/PEDOT:PSS/PM6:Y6/Bis-FIMG	Ag/TeO_2/Ag	14.60%	45
ITO/PEDOT:PSS/PM6:N3:$PC_{71}BM$/PDINO	Al:Ag/dielectric stack/Al:Ag/dielectric stacks/carbon fluoride (CF)	15.07%	46
ITO/ZnO/PTB7-Th:ITIC/MoO_3	Ag/TiO_2-AcAc/Ag	5.96%	47
ITO/ZnO/PTB7-Th:$PC_{71}BM$/MoO_3	Ag/ITO/Ag	8.20%	48
ITO/ZnO/PTB7-Th:$PC_{71}BM$/MoO_3	Au/Ag/WO_3/Ag	9.02%	49
ITO/ZnO/PM7:PTTtID-Cl:IT-4F/MoO_3	Ag/ITO/Ag	9.10%	50
ITO/ZnO/PEIE/PM6:Y6/MoO_3	Ag/HAT-CN/Ag	13.28%	51
ITO/PEDOT:PSS/$MAPbI_{3-x}Cl_x$/$PC_{61}BM$	Ag/ITO/Ag	7.60%	52
ITO/NiO/$MAPbI_3$/PCBM/BCP	Ag/SiO_2/ZnS/Ag/ZnS	11.18%	53
ITO/ZnO/PM6:Y6/MoO_3	Al:Ag/HAT-CN/Al:Ag	13.62%	This work