

Supporting Information

Seed layer formation determines photocurrent response of hydrothermally-grown WO₃ photoanodes

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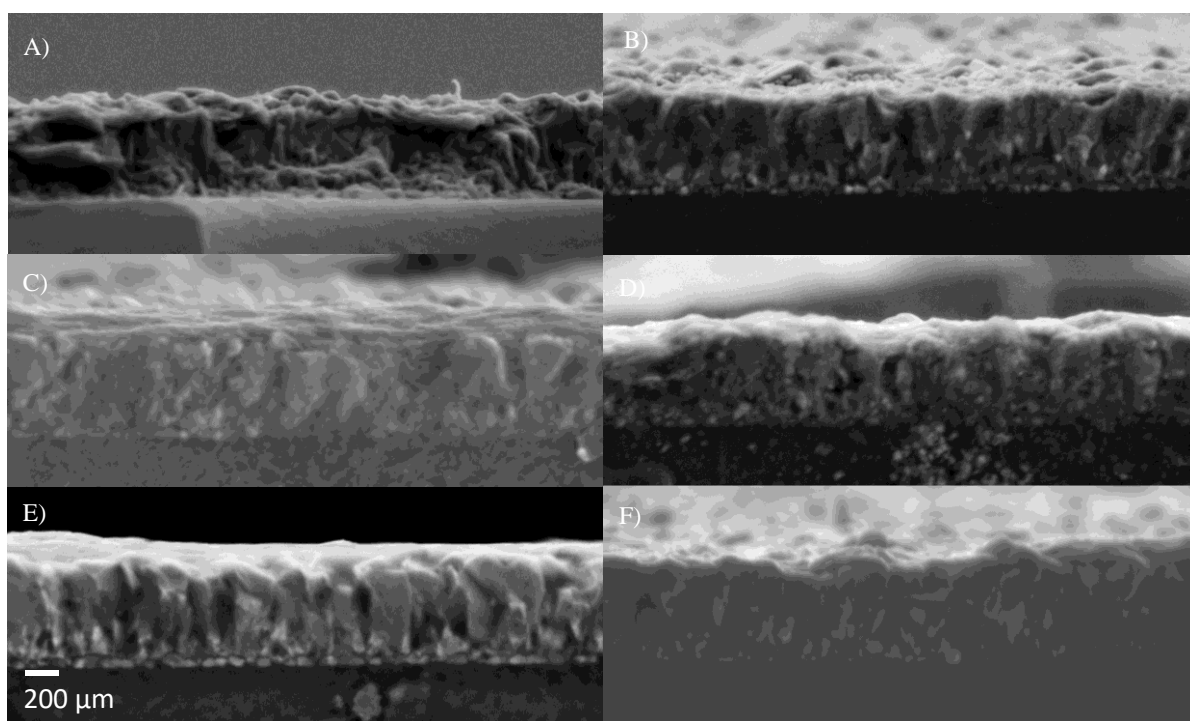


Figure S1. Cross Section SEM images of the seed layer prepared by static spin coating.

Table S1: XPS results of the measured seed layers synthesized via static spin coating.

	Static Spin Coating		
	W / At%	Sn / At%	W / Sn ratio
A	11.60	8.97	1.29
B	11.84	9.49	1.25
C	11.49	7.17	1.60
D	19.58	-	
E	10.3	12.73	0.81
F	10.5	11.74	0.89

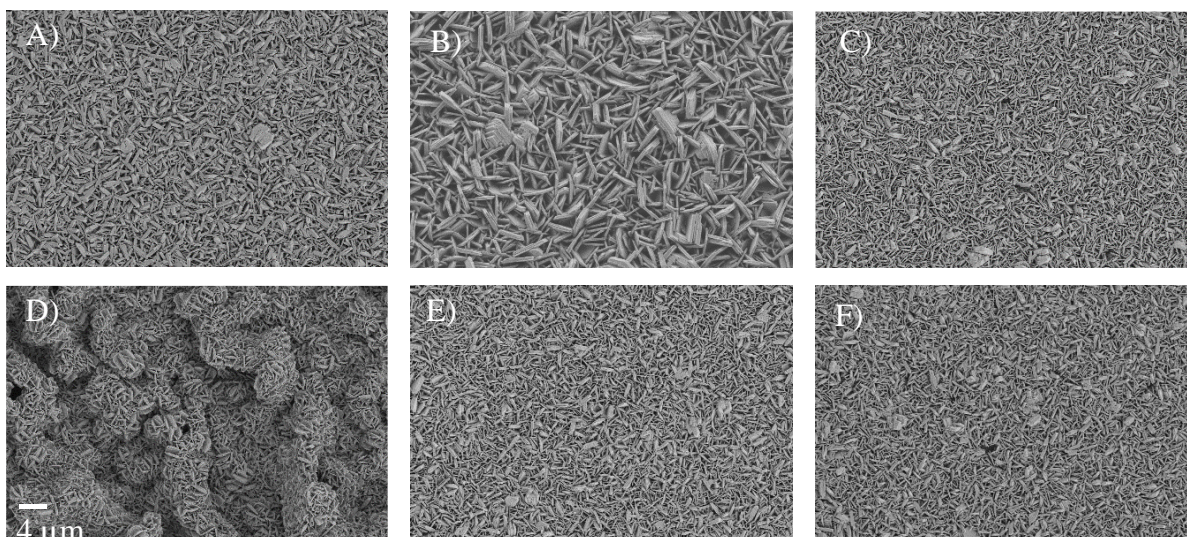


Figure S2. Overview SEM images of hydrothermally grown WO_3 films from seed layer after static spin coating. The scale is the same for every measurement.

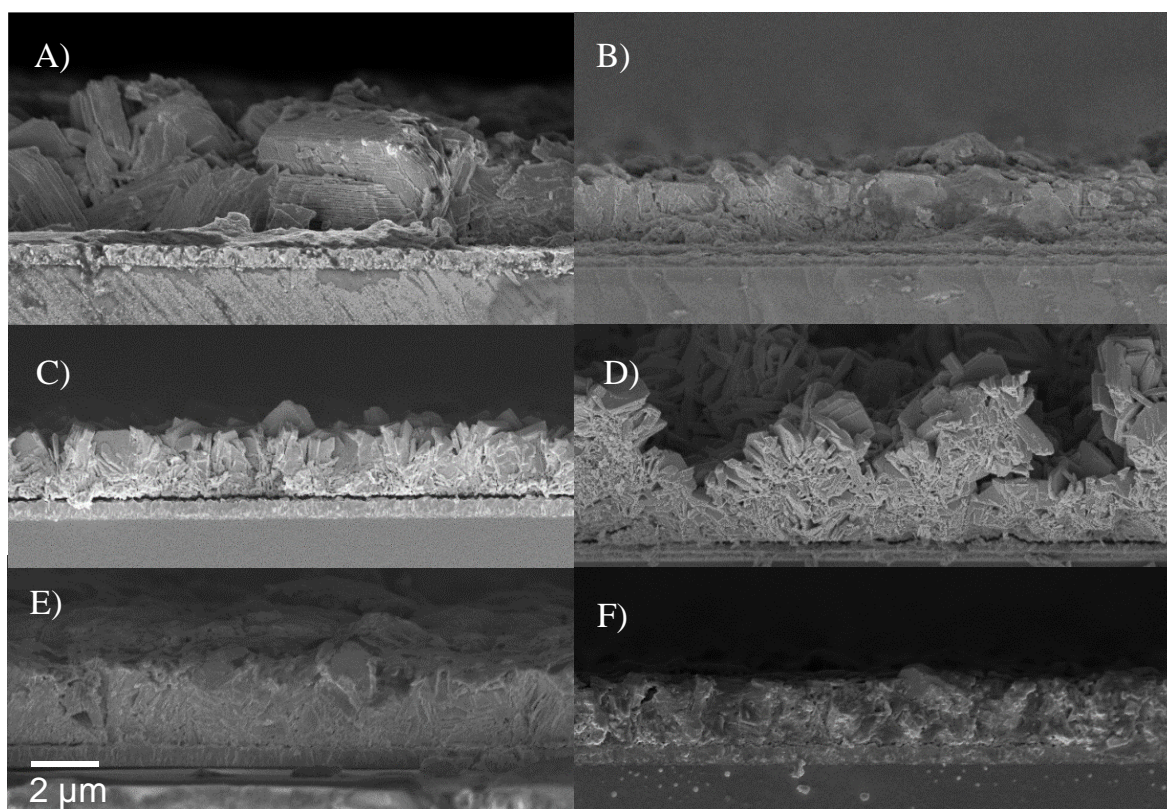


Figure S3. Cross Section SEM images grown WO_3 samples from seed layers after static spin coating. The scale is the same for every measurement.

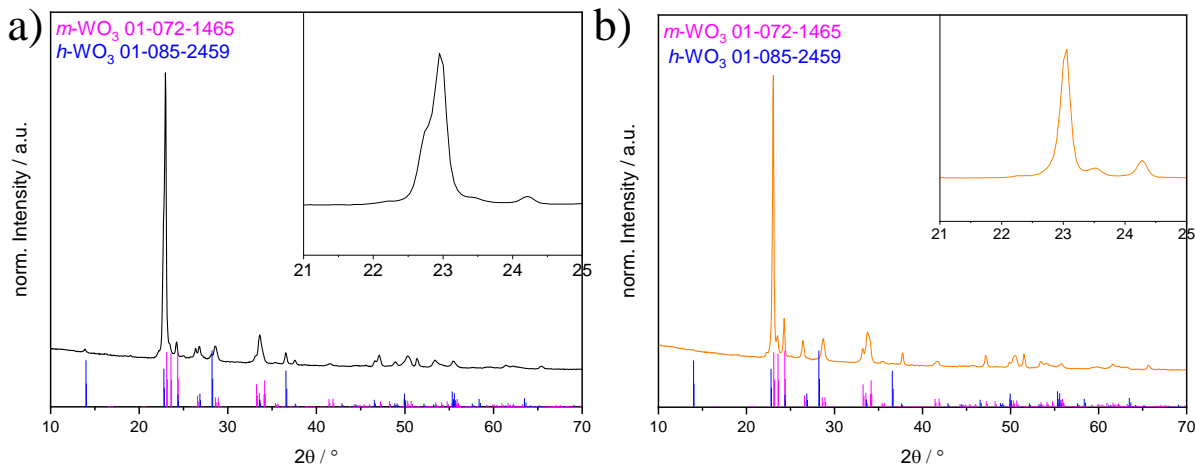


Figure S4. Detailed diffractogram of grown WO_3 sample synthesized from seed layers after static spin coating a) at 2000 rpm/30 s and b) at 5000 rpm/30 s. Inset displays a magnification.

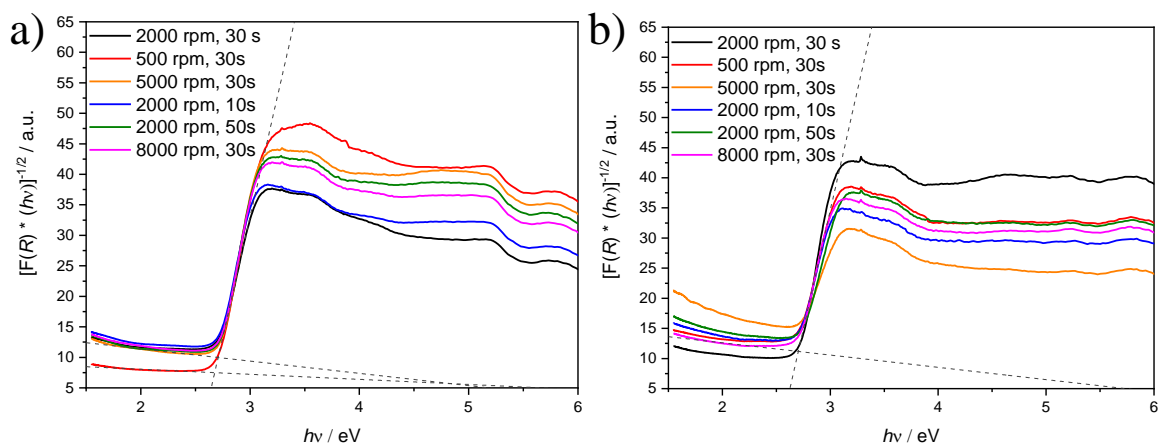


Figure S5. Tauc-plots of WO_3 photoanodes grown from seed layers prepared via a) static spin coating and b) dynamic spin coating.

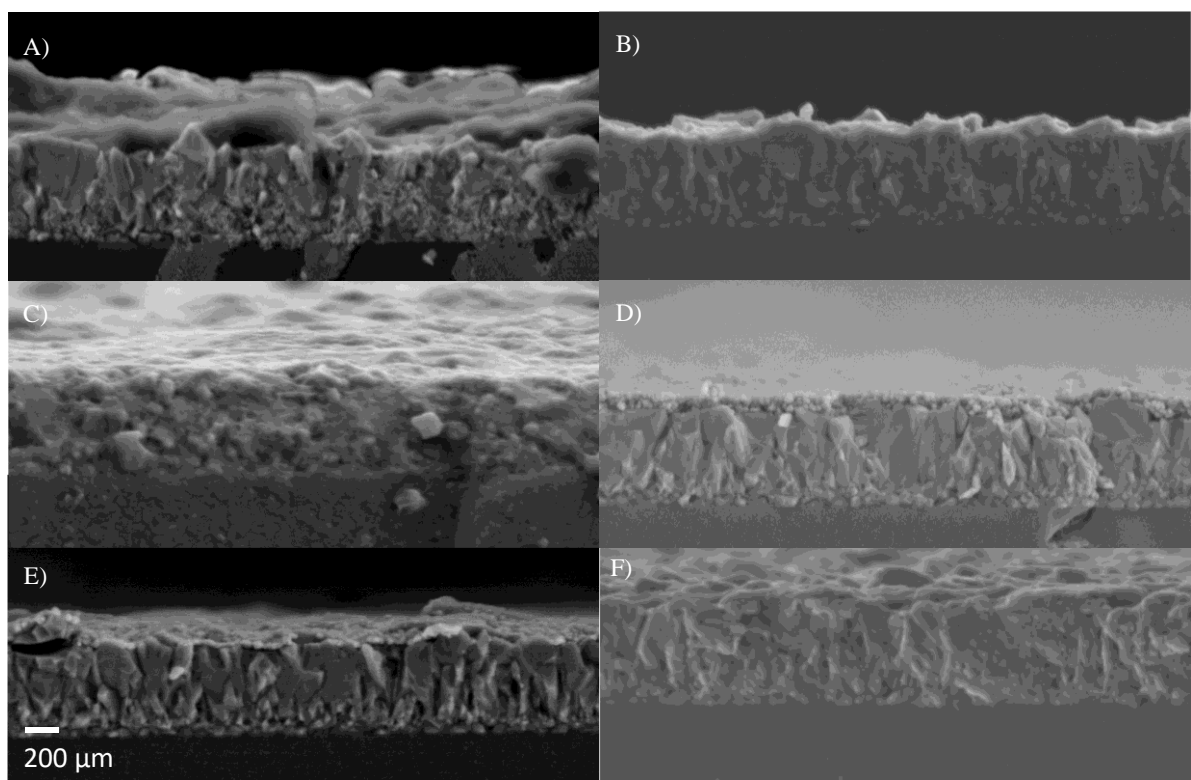


Figure S6. Cross Section SEM images of the seed layer prepared by dynamic spin coating.

Table S2: XPS results of the measured seed layers synthesized via dynamic spin coating.

	Dynamic Spin Coating		
	W / At%	Sn / At%	W/ Sn ratio
A	7.69	10.18	0.76
B	10.21	9.1	1.12
C	11.2	11.71	0.96
D	20.75	-	
E	8.09	15.11	0.54
F	9.92	13.29	0.75

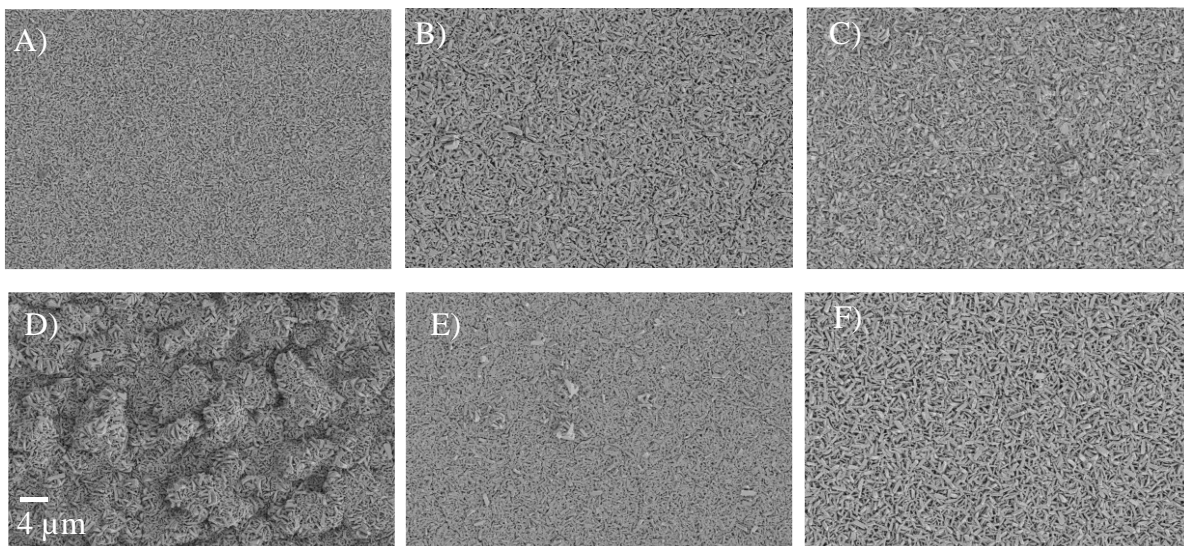


Figure S7. Overview SEM images of hydrothermally grown WO_3 films from seed layer after dynamic spin coating. The scale is the same for every measurement.

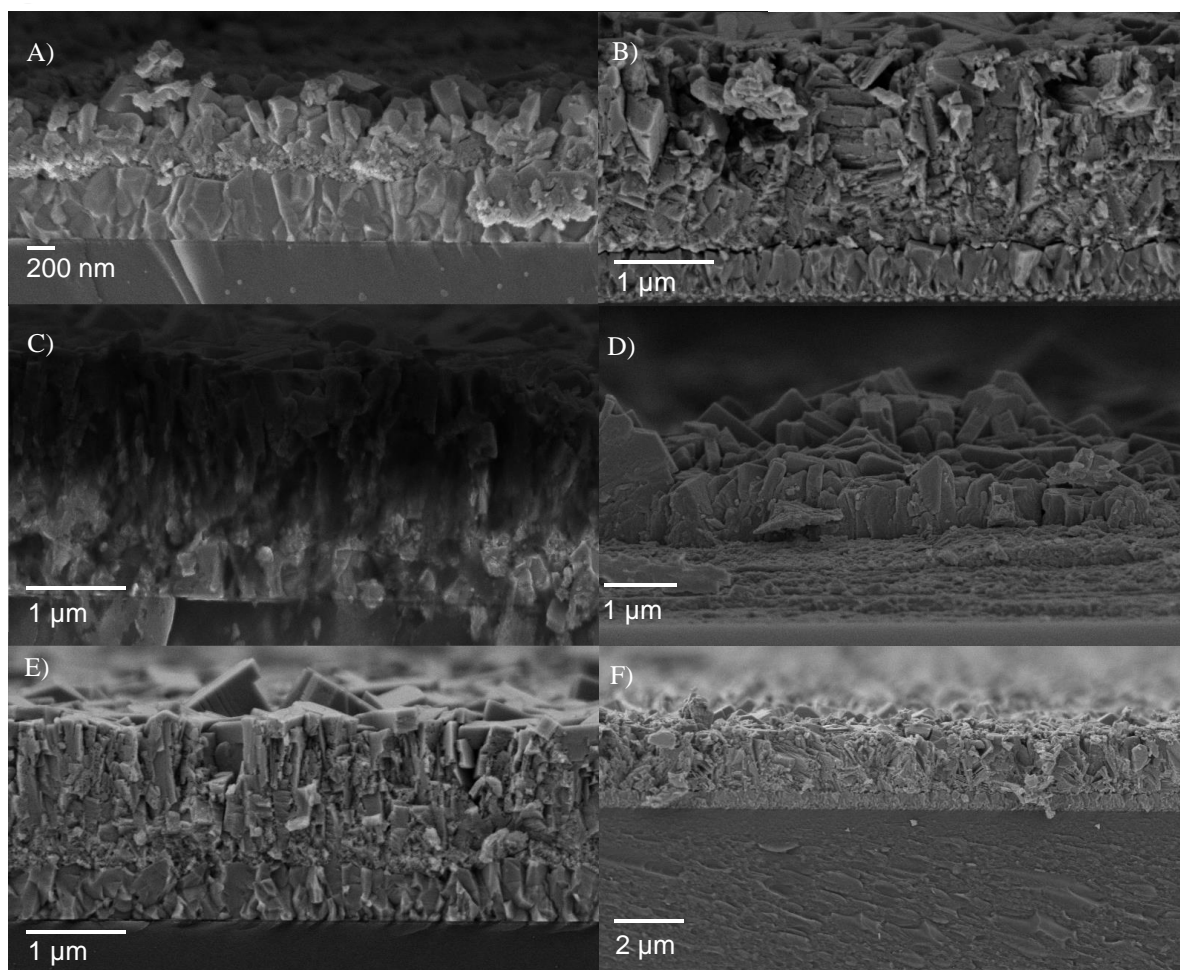


Figure S8. Cross Section SEM images grown WO_3 samples from seed layers after dynamic spin coating.

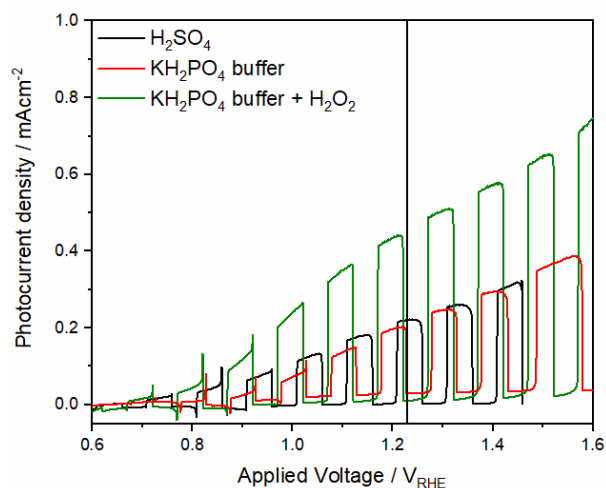


Figure S9. CLV in KH_2PO_4 as electrolyte with and without H_2O_2 as an hole scavenger.

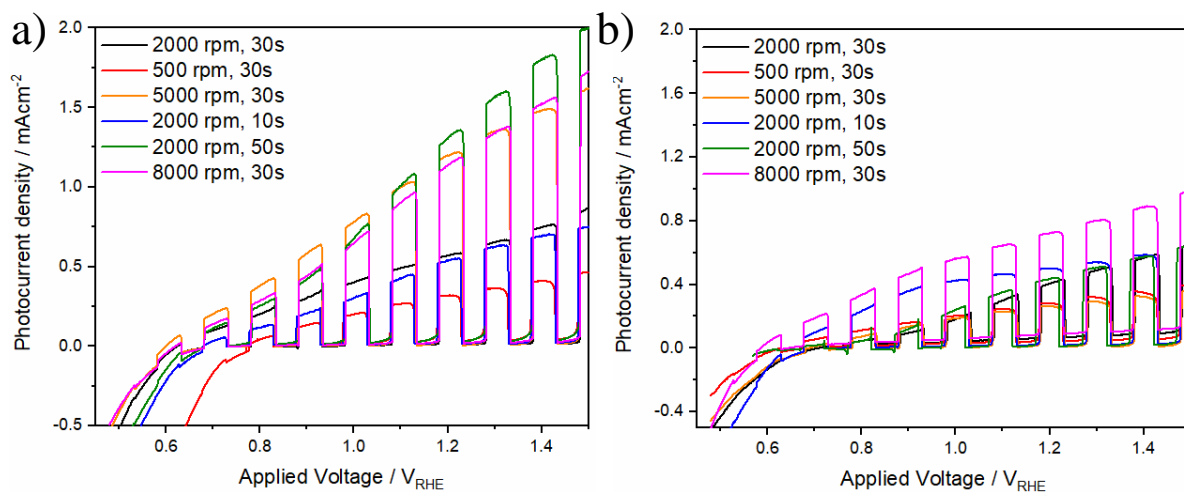


Figure S10. CLV in KH_2PO_4 as electrolyte with H_2O_2 as an hole scavenger for a) static and b) dynamic spin coating.

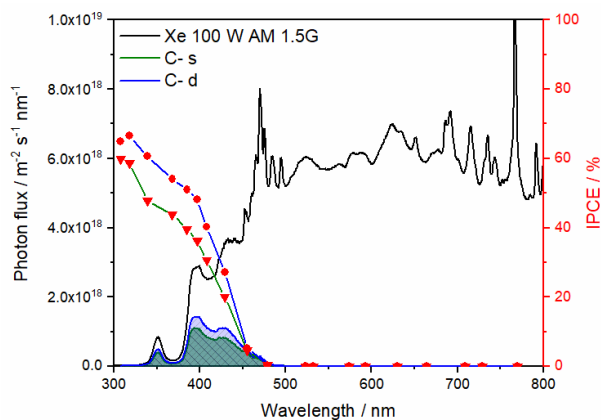


Figure S11. Maximum theoretical photocurrent determined by IPCE derived absorption of the photon flux of the used Xe 300W arc lamp with an intensity of 100 W cm^{-2} equipped with an AM 1.5 G filter (black line).