

Supplementary Materials

Thin films of metal-organic frameworks interfaces obtained by laser evaporation

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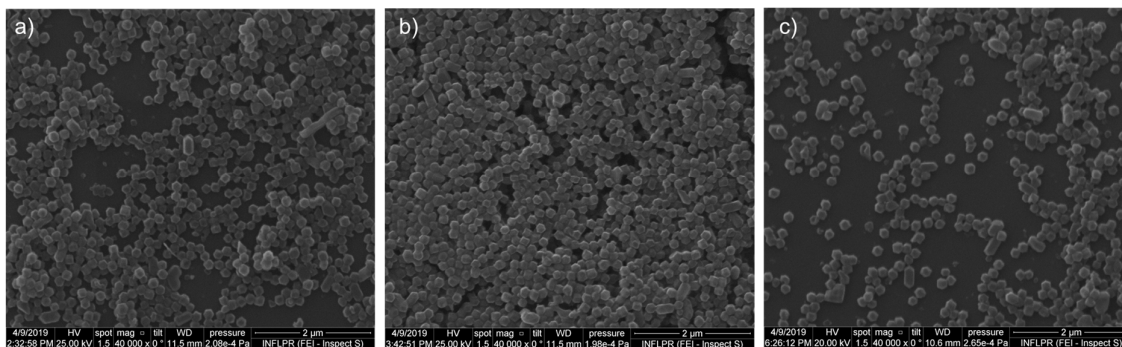


Figure 1. SEM images of MAPLE samples deposited at different fluencies, i.e., 0.3 (a); 0.6 (b) and 0.8 J·cm⁻² (c) respectively.

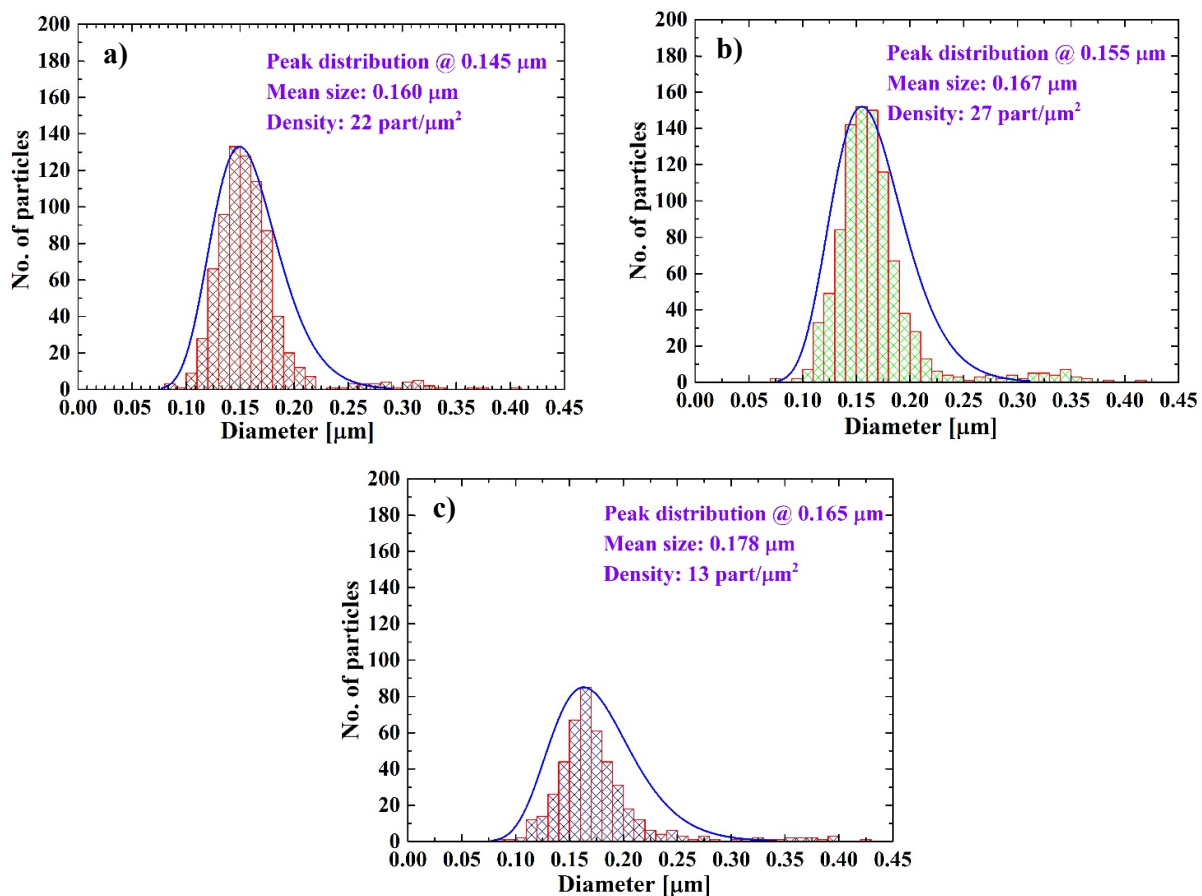


Figure S2: Histogram size analysis of MAPLE deposited samples at different laser fluencies (a for 0.3 J·cm⁻², b for 0.6 J·cm⁻² and c for 0.8 J·cm⁻² respectively)

Table S1. Element average weight percent of MAPLE films obtained at different fluencies.

Element Average Weight percent (%)	Control ZIF8	ZIF8 (0.300 J·cm ⁻²)	ZIF8 (0.450 J·cm ⁻²)	ZIF8 (0.600 J·cm ⁻²)	ZIF8 (0.800 J·cm ⁻²)
C	44.74 ± 3.04	16.07 ± 12.76	47.27 ± 0.99	46.70 ± 2.12	32.18 ± 8.52
N	19.97 ± 2.12	3.65 ± 4.04	29.75 ± 3.01	27.59 ± 5.01	10.73 ± 5.00
O	1.44 ± 1.59	0.57 ± 0.48	1.81 ± 0.53	1.94 ± 1.05	0.47 ± 0.40
Zn	5.73 ± 0.69	1.52 ± 0.86	7.43 ± 1.65	6.69 ± 2.25	1.97 ± 0.66

Table S2. Atomic ratios for ZIF-8 control and MAPLE deposited ZIF-8 films.

The Zn doublet Zn 2p_{3/2} and Zn 2p_{1/2} can be identified at 1022.8 eV and 1046 eV, with the characteristic split spin-orbit components (23.2 eV).

	ZIF8 Control	ZIF8 (0.300 J·cm ⁻²)	ZIF8 (0.450 J·cm ⁻²)	ZIF8 (0.600 J·cm ⁻²)	ZIF8 (0.800 J·cm ⁻²)
	Atomic %	Atomic %	Atomic %	Atomic %	Atomic %
Zn2p ₃	6.52	9.17	7.73	8.7	7.42
C1s	53.91	47.82	48.44	44.88	49.37
O1s	19.03	29.39	26.78	27.75	30.21
N1s	20	13.92	17.05	18.67	13
Zn2p ₃ /N1s	0.317	0.673	0.453	0.466	0.570

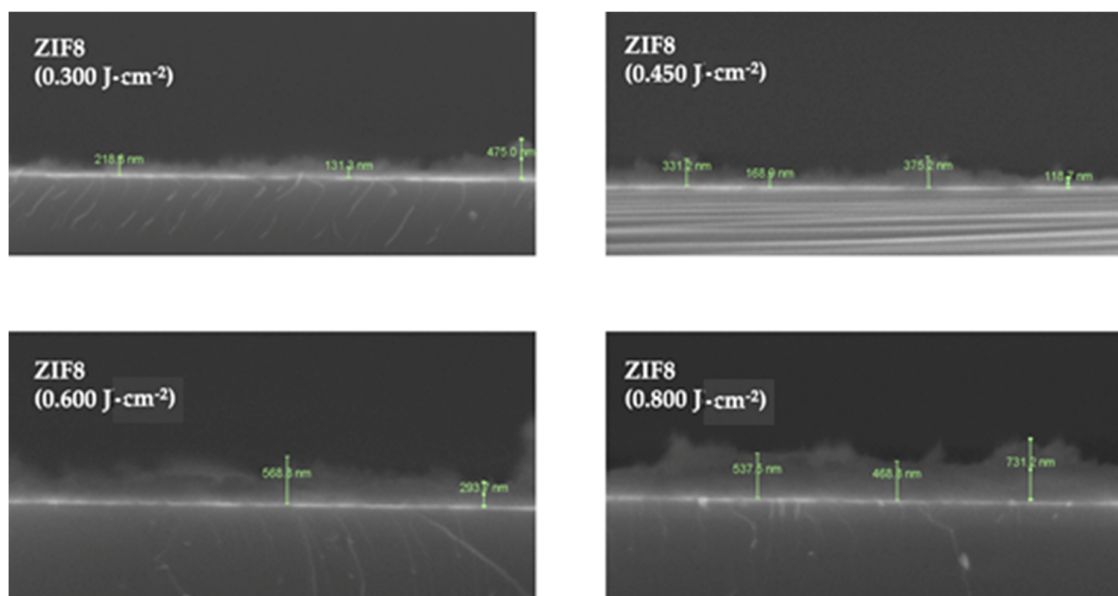


Figure S3: Cross-section and thin film thickness dependence on the frequency being used.

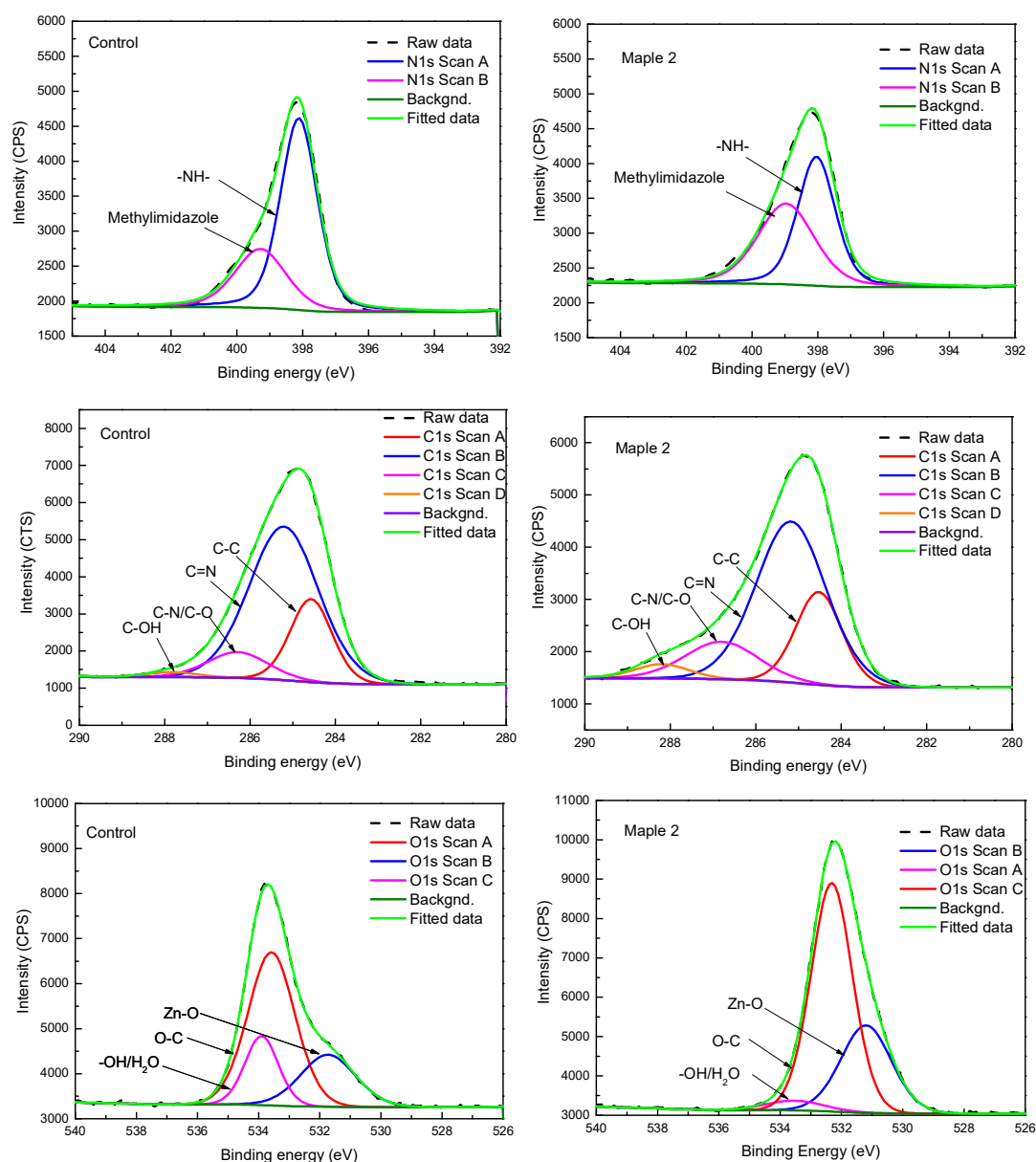


Figure S4. C1s, O1s and N1s high-resolution XPS spectra of ZIF-8 control and MAPLE deposited ZIF-8 film obtained at the 0.45 Jcm⁻² fluency.

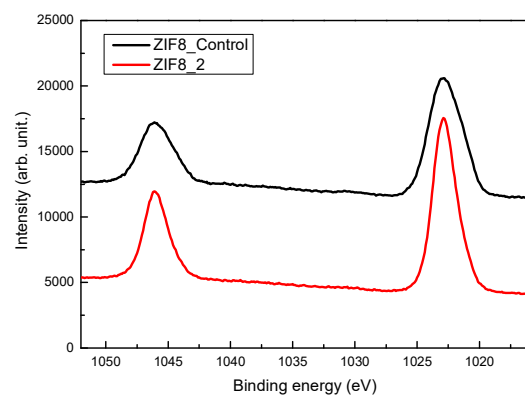


Figure S5: Zn2p high-resolution XPS spectra of ZIF-8 control and MAPLE deposited ZIF-8 thin film at $0.450 \text{ J}\cdot\text{cm}^{-2}$.