

## Supporting Information

### Self-Assembly-Directed Exciton Diffusion in Solution-Processable Metalloporphyrin Thin Films

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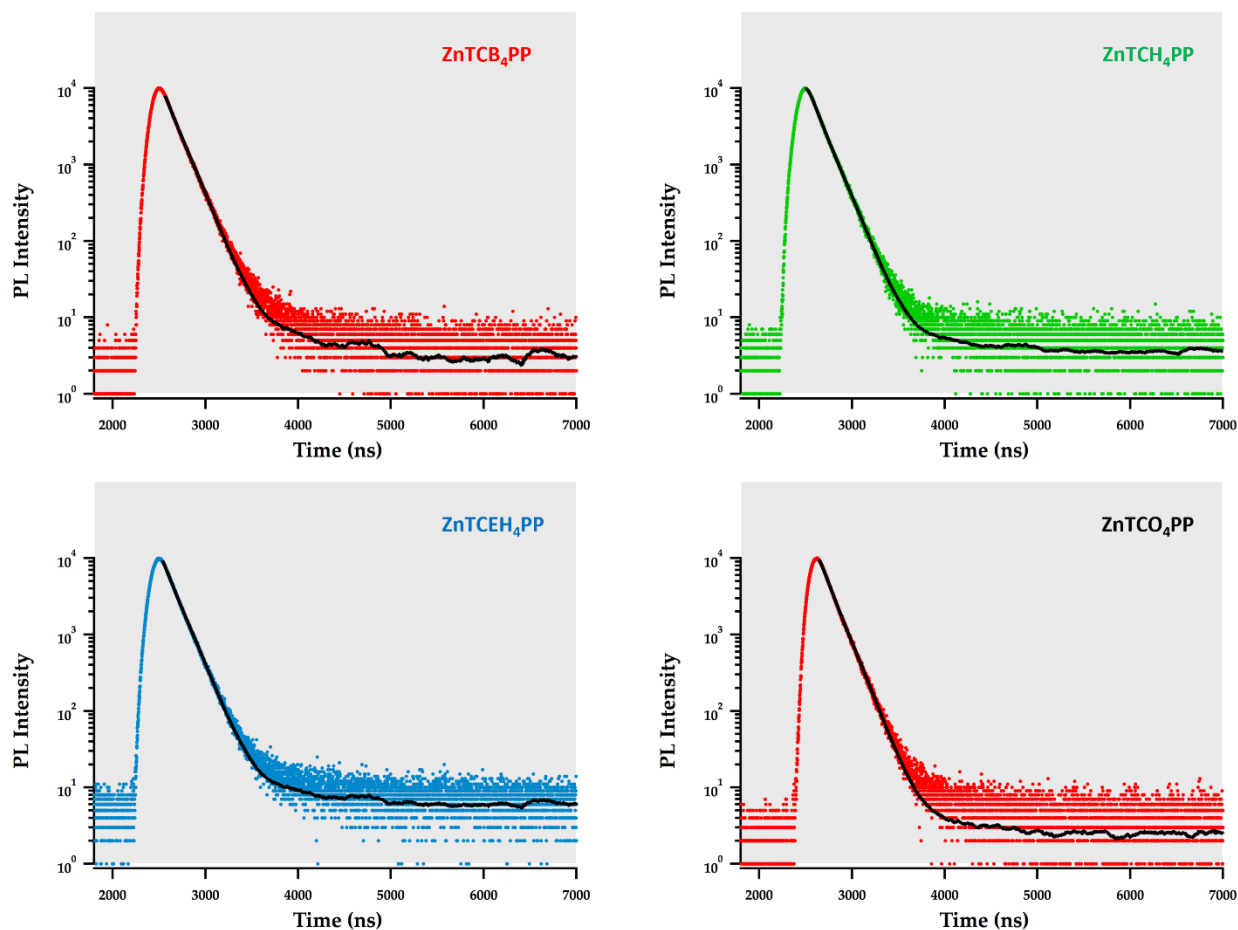
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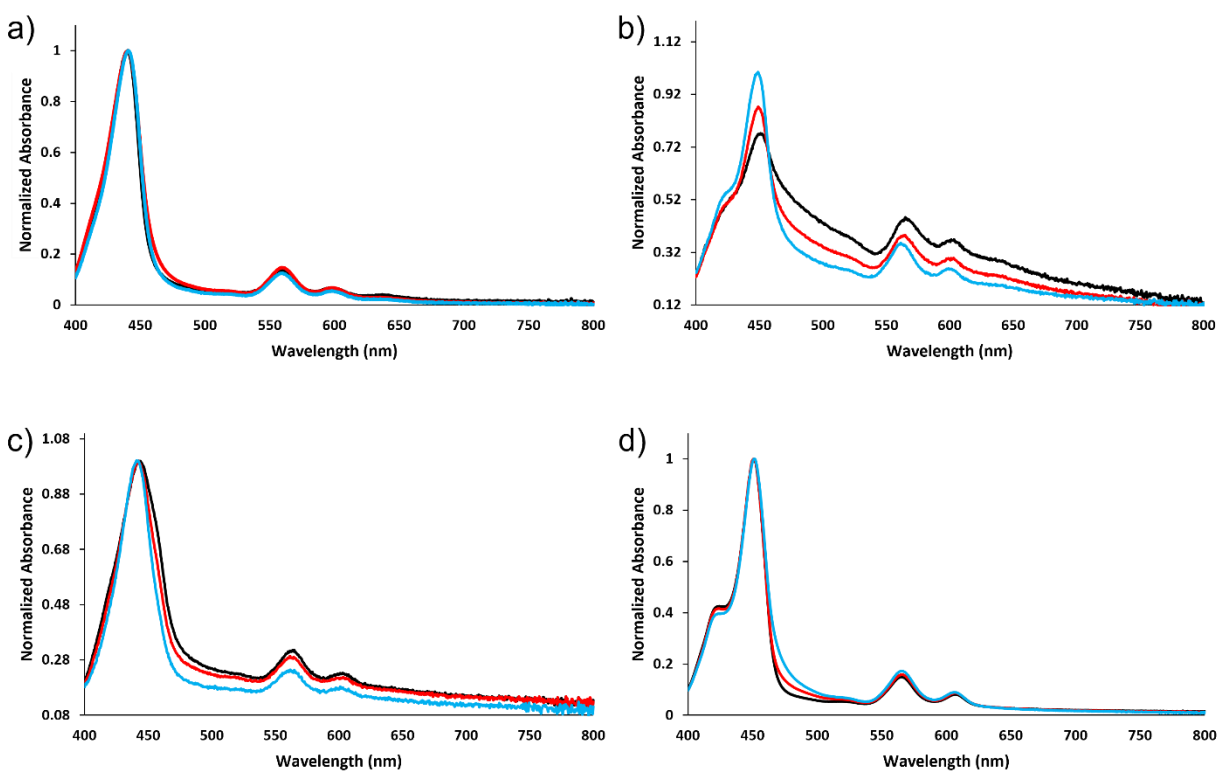
Charlotte, NC 28223 (USA)

**Figure S1.** Time-resolved fluorescence spectra and first order fitting of a) ZnTCB<sub>4</sub>PP, b) ZnTCH<sub>4</sub>PP, c) ZnTCEH<sub>4</sub>PP and d) ZnTCO<sub>4</sub>PP.



Metalloporphyrin	$\tau_{S1}$ (ns)
ZnTCB <sub>4</sub> PP	1.89
ZnTCH <sub>4</sub> PP	1.89
ZnTCEH <sub>4</sub> PP	1.89
ZnTCO <sub>4</sub> PP	1.85

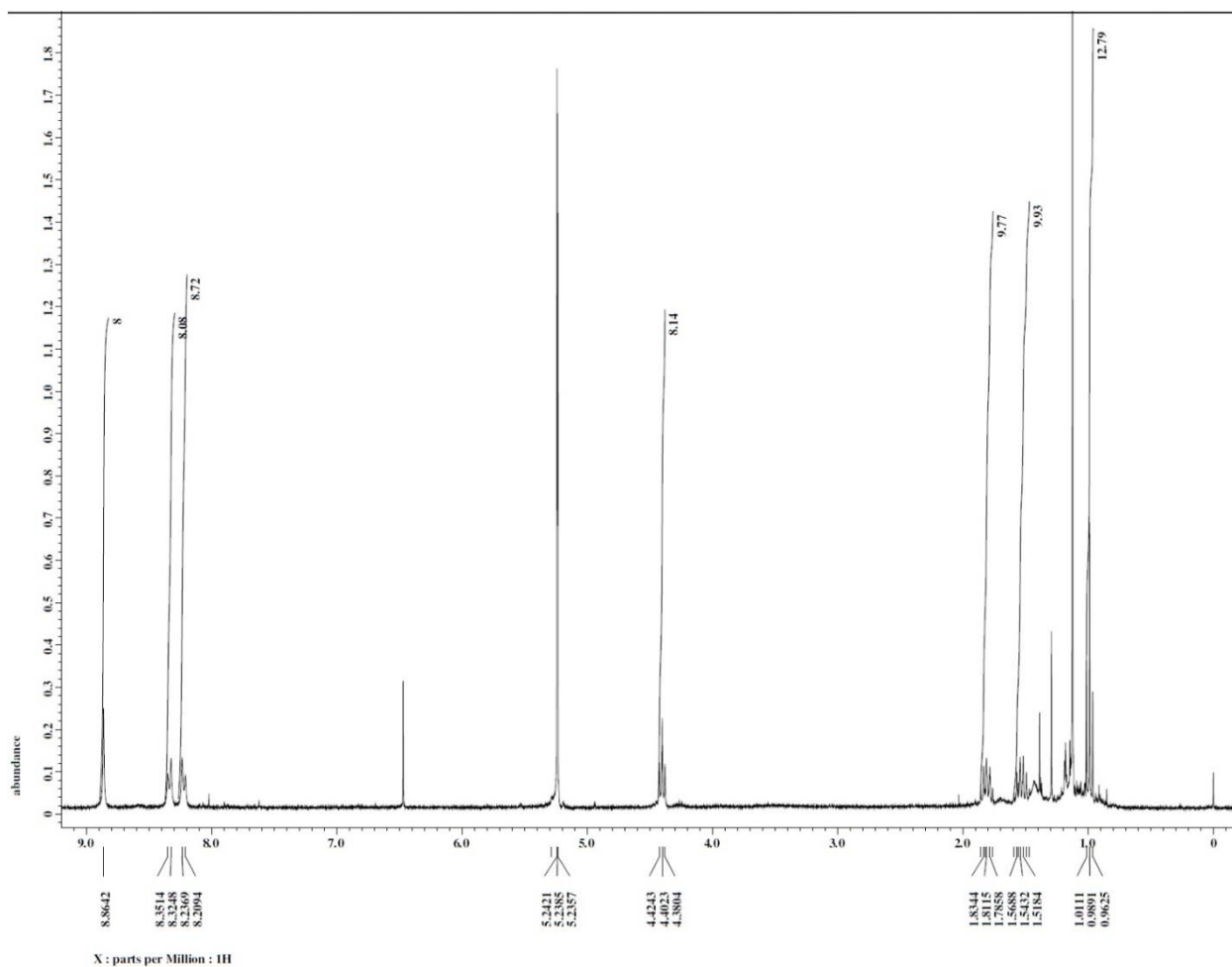
**Figure S2:** UV-Vis absorption spectra of spin-cast metalloporphyrins thin films of (a) ZnTCB<sub>4</sub>PP, (b) ZnTCH<sub>4</sub>PP, (c) ZnTCEH<sub>4</sub>PP and (d) ZnTCO<sub>4</sub>PP. Each plot includes spectra of pristine films (-), films doped with  $v_{\text{frac}}$  0.06% (-) and films doped with  $v_{\text{frac}}$  0.2% (-)



**Table S1:** XRD Diffraction Data for ZnTCB<sub>4</sub>PP, ZnTCH<sub>4</sub>PP, ZnTCEH<sub>4</sub>PP and ZnTCO<sub>4</sub>PP (Cu K $\alpha$  radiation of  $\lambda = 1.541 \text{ \AA}$ ).

Material	Peak (2 $\theta$ )	d-spacing ( $\text{\AA}$ )	Intensity	Rel Intensity
<b>ZnTCB<sub>4</sub>PP</b>	5.87	15.05	77	0.31
	13.95	6.34	122	0.49
	16.81	5.27	250	1.00
	18.73	4.74	62	0.25
	25.45	3.50	57	0.23
<b>ZnTCH<sub>4</sub>PP</b>	5.51	16.03	155	0.58
	14.09	6.28	114	0.43
	16.91	5.24	265	1.00
	18.43	4.81	64	0.24
	25.35	3.51	57	0.22
<b>ZnTCO<sub>4</sub>PP</b>	4.61	19.16	365	2.97
	9.21	9.60	30	0.24
	13.87	6.38	64	0.52
	16.87	5.25	123	1.00
	18.45	4.81	52	0.42
	25.33	3.51	49	0.40
<b>ZnTCEH<sub>4</sub>PP</b>	14.07	6.29	188	0.40
	16.85	5.26	474	1.00
	18.47	4.80	87	0.18
	25.57	3.48	77	0.16

**Figure S3:**  $^1\text{H}$ -NMR of  $\text{ZnTCB}_4\text{PP}$



**Figure S4:** MALDI-TOF Mass Spectra of ZnTCB<sub>4</sub>PP

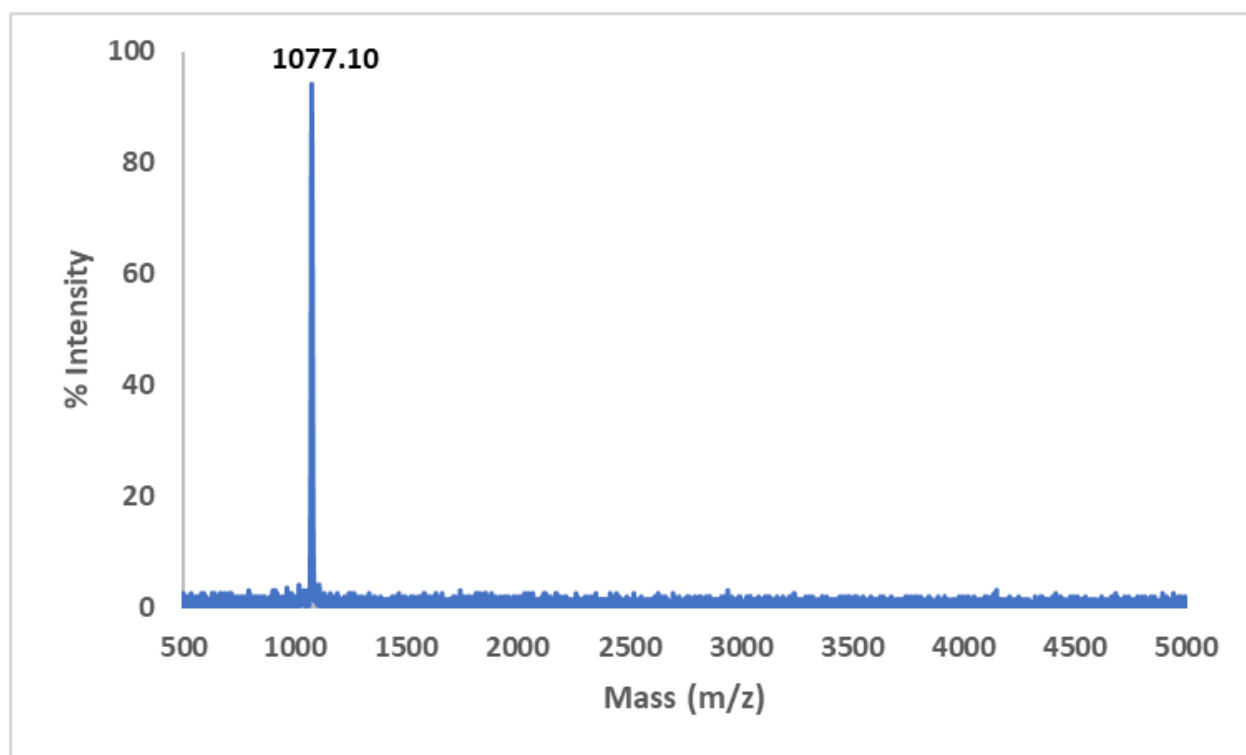
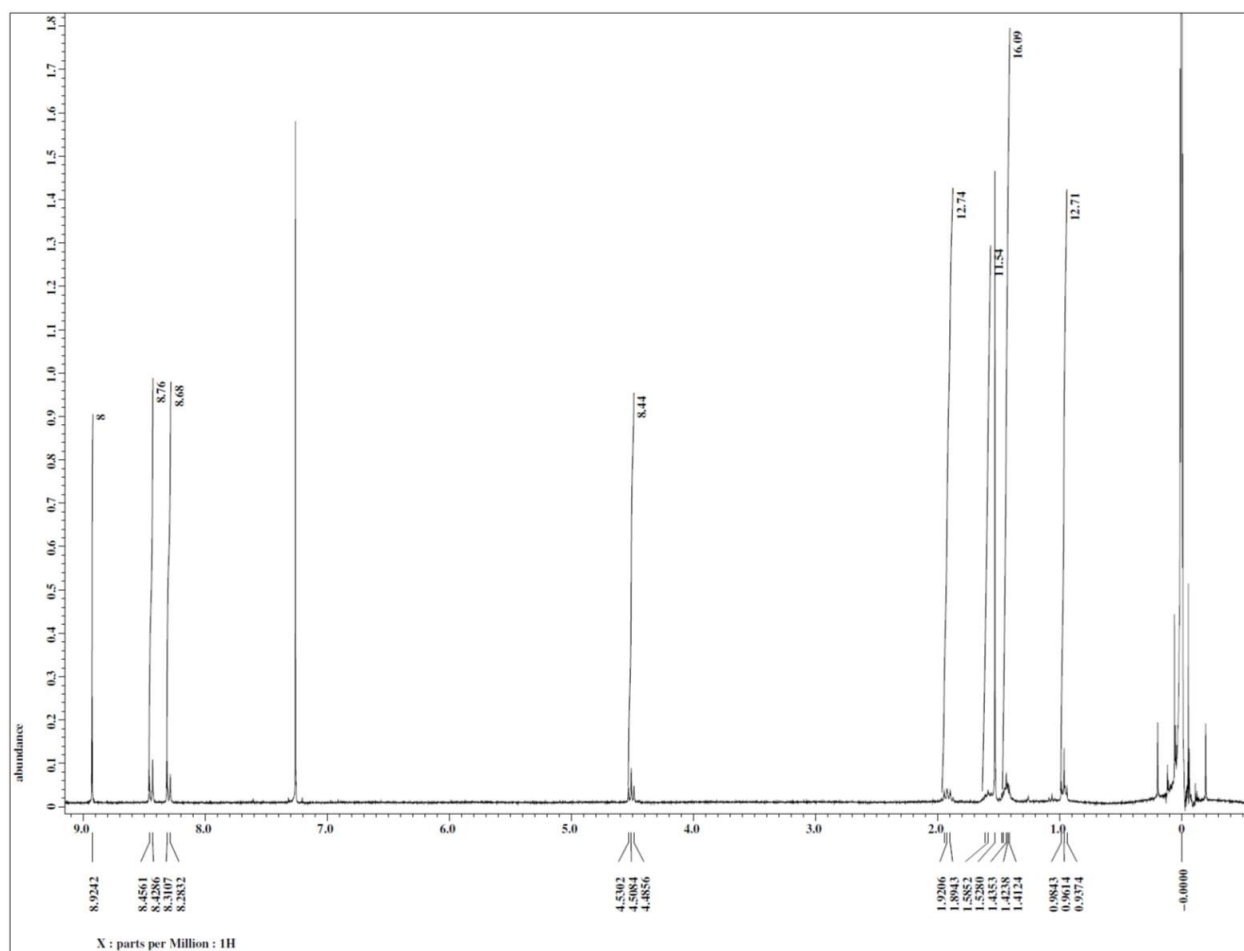
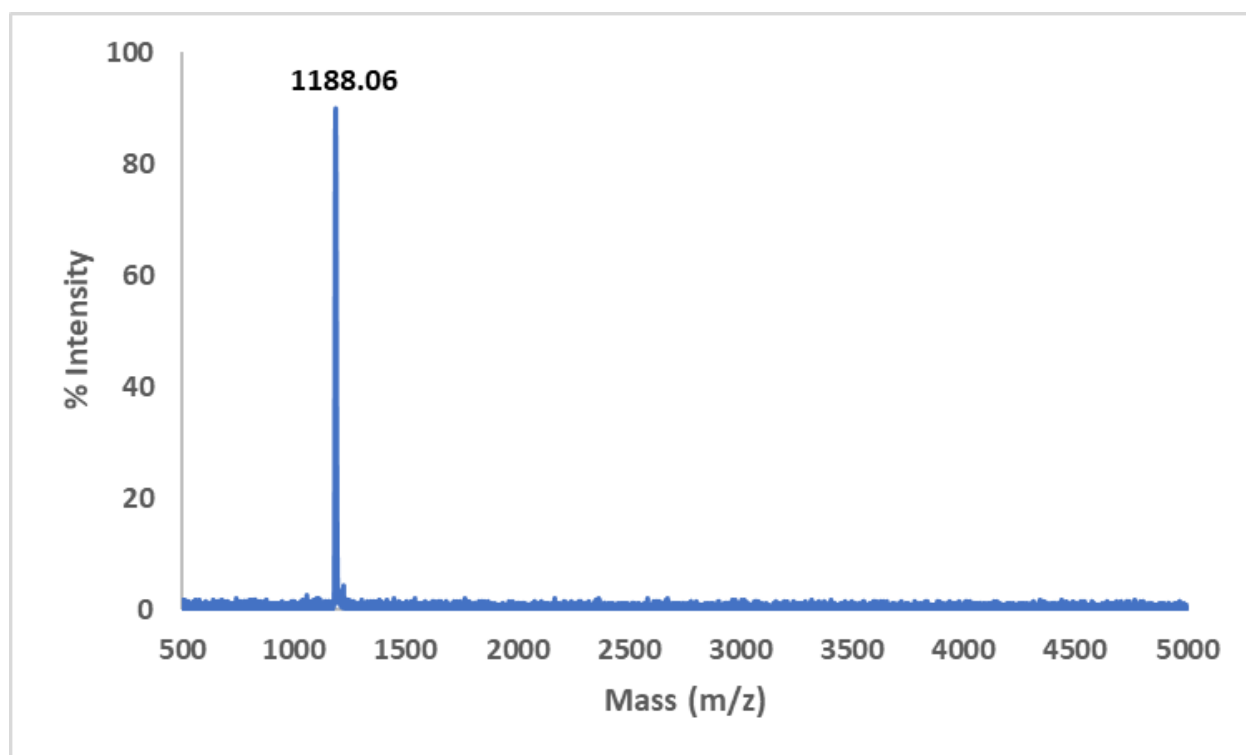


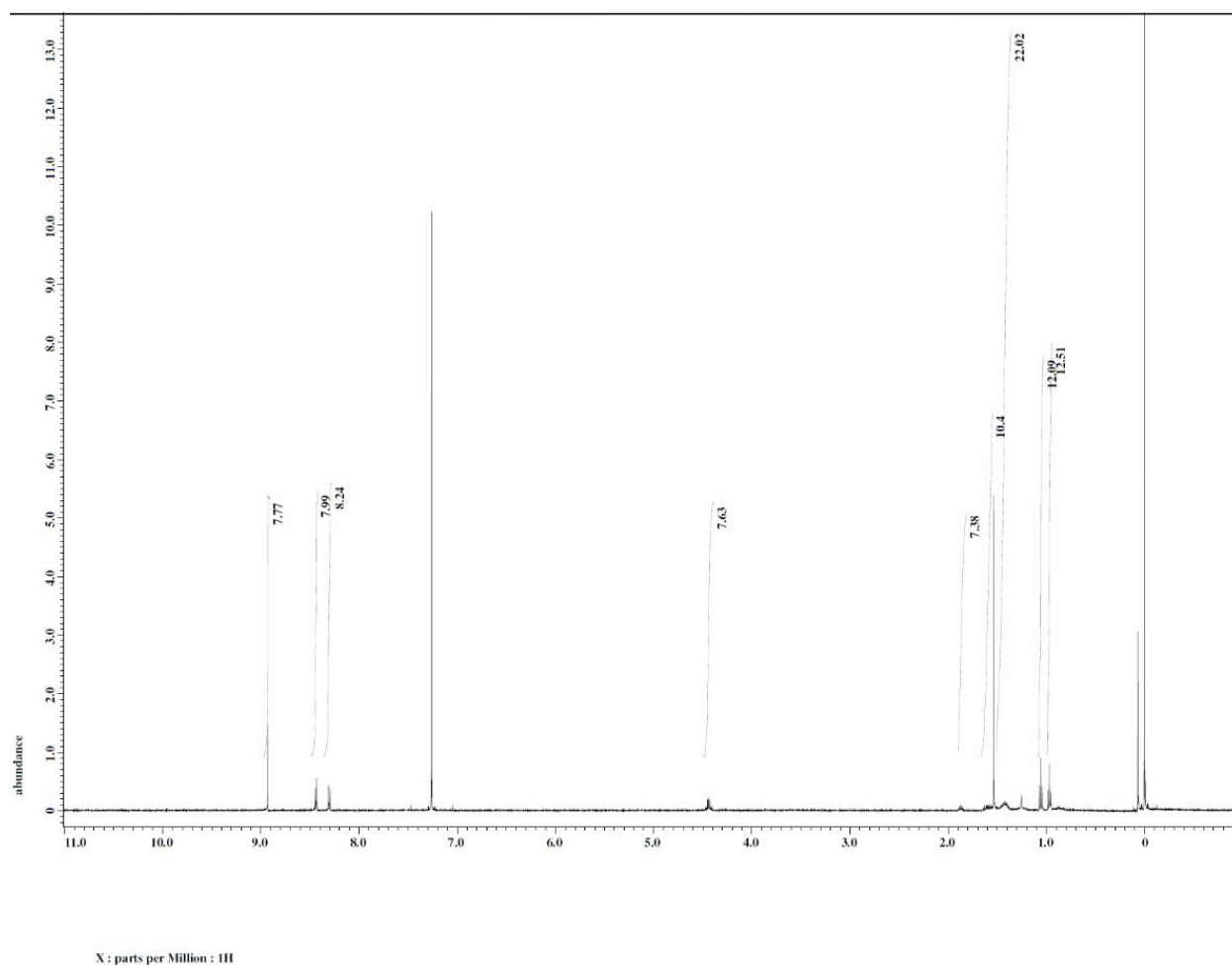
Figure S5:  $^1\text{H}$ -NMR of  $\text{ZnTCH}_4\text{PP}$



**Figure S6:** MALDI-TOF Spectra of ZnTCH<sub>4</sub>PP

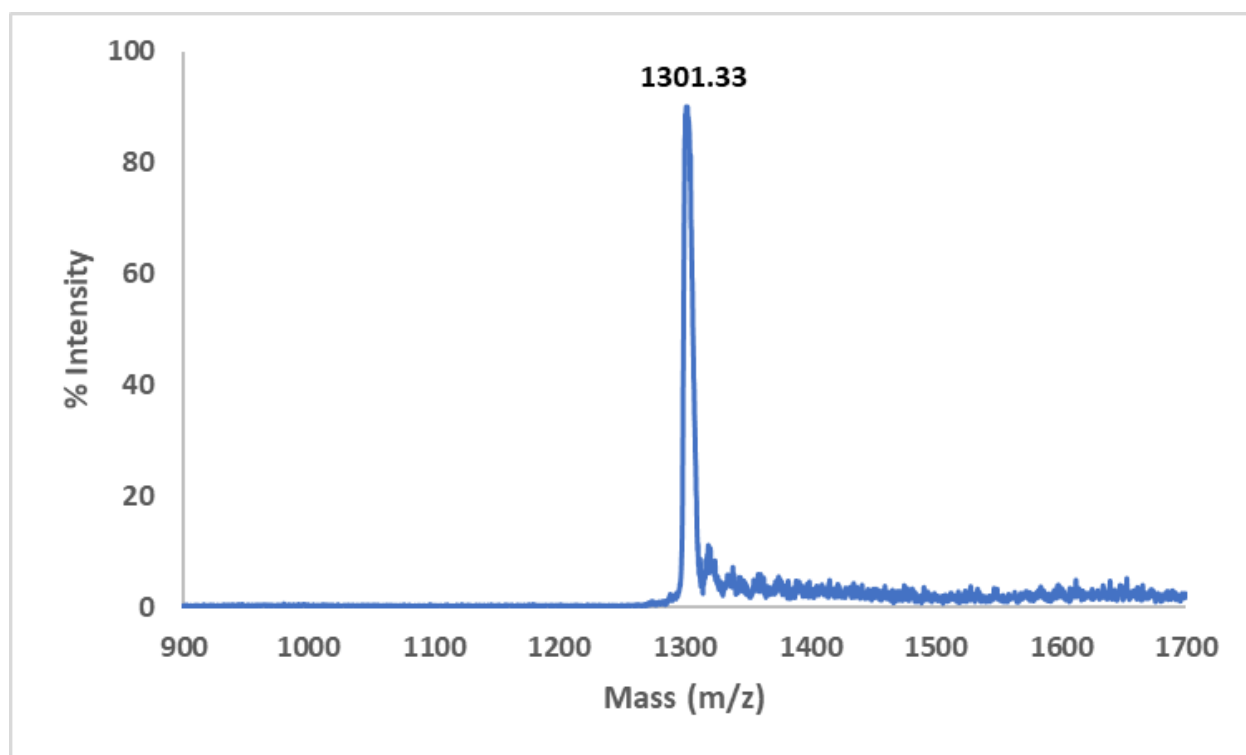


**Figure S7:**  $^1\text{H}$ -NMR of  $\text{ZnTCEH}_4\text{PP}$

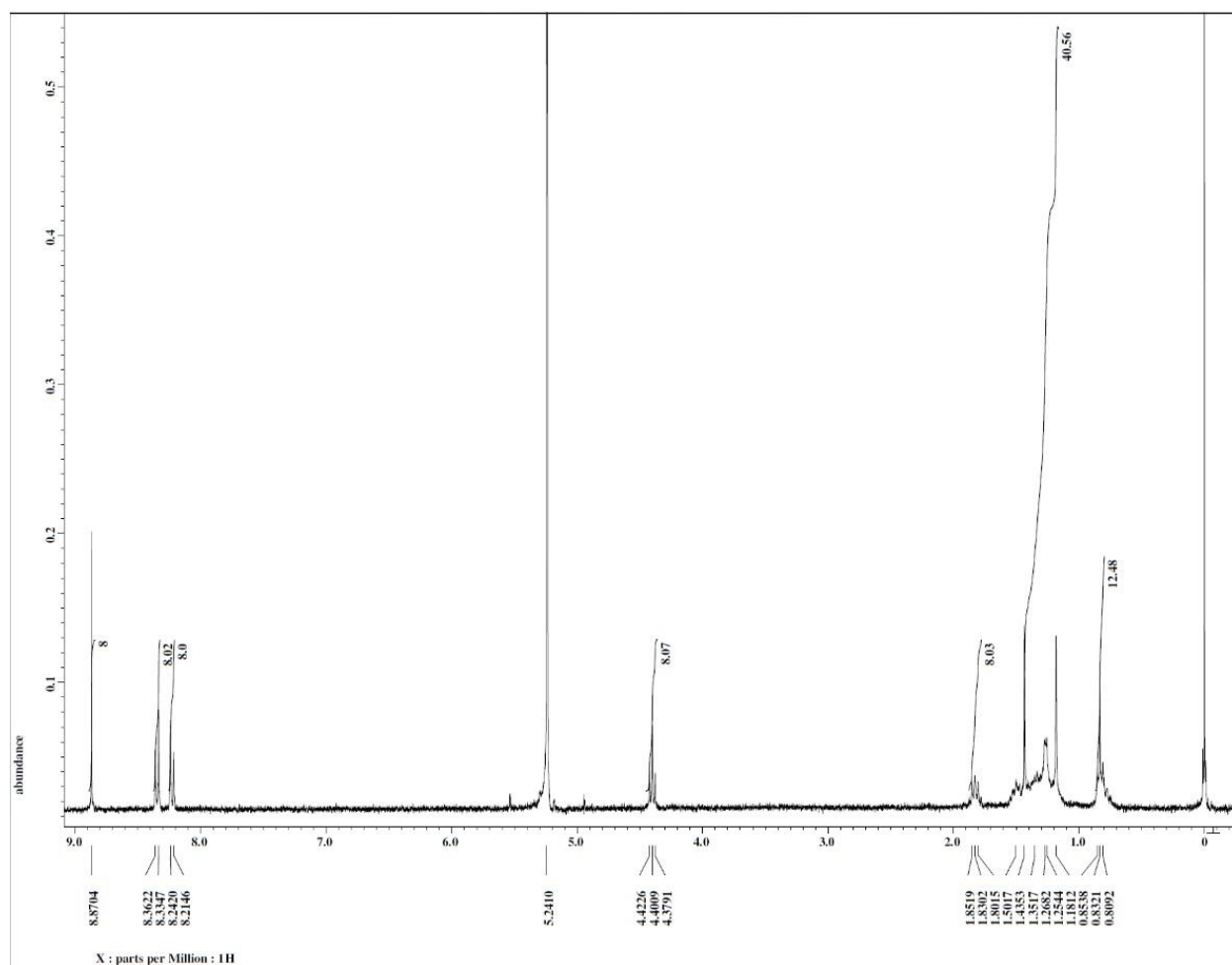




**Figure S8:** MALDI-TOF Mass Spectra of ZnTCEH<sub>4</sub>PP



**Figure S9:**  $^1\text{H}$ -NMR of  $\text{ZnTCO}_4\text{PP}$



**Figure S10:** MALDI-TOF Mass Spectra of ZnTCO<sub>4</sub>PP

