Electronic Supplementary Material (ESI) for Journal of Materials Chemistry

A New Supramolecular POSS Electroluminescent Material

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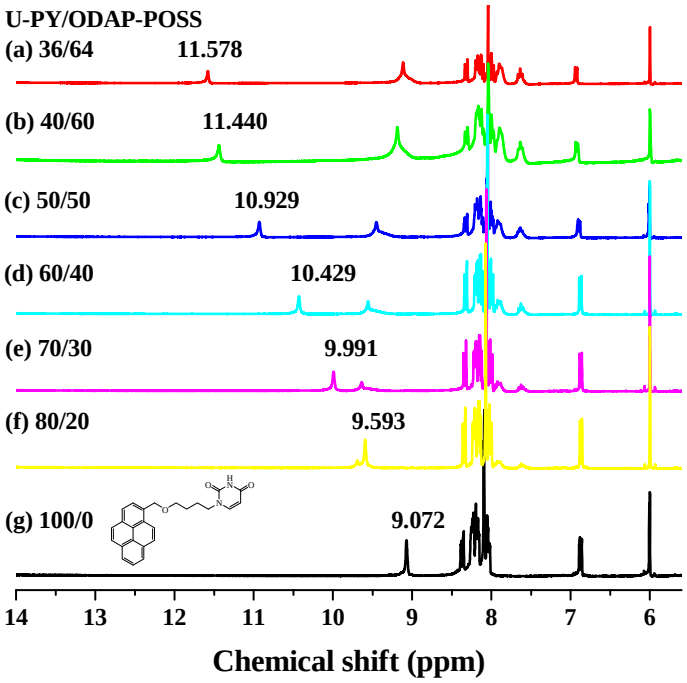

Figure S1. ^{1}H NMR spectroscopic titration. Amide region of the ^{1}H NMR spectrum of U-PY after the addition of ODAP-POSS.

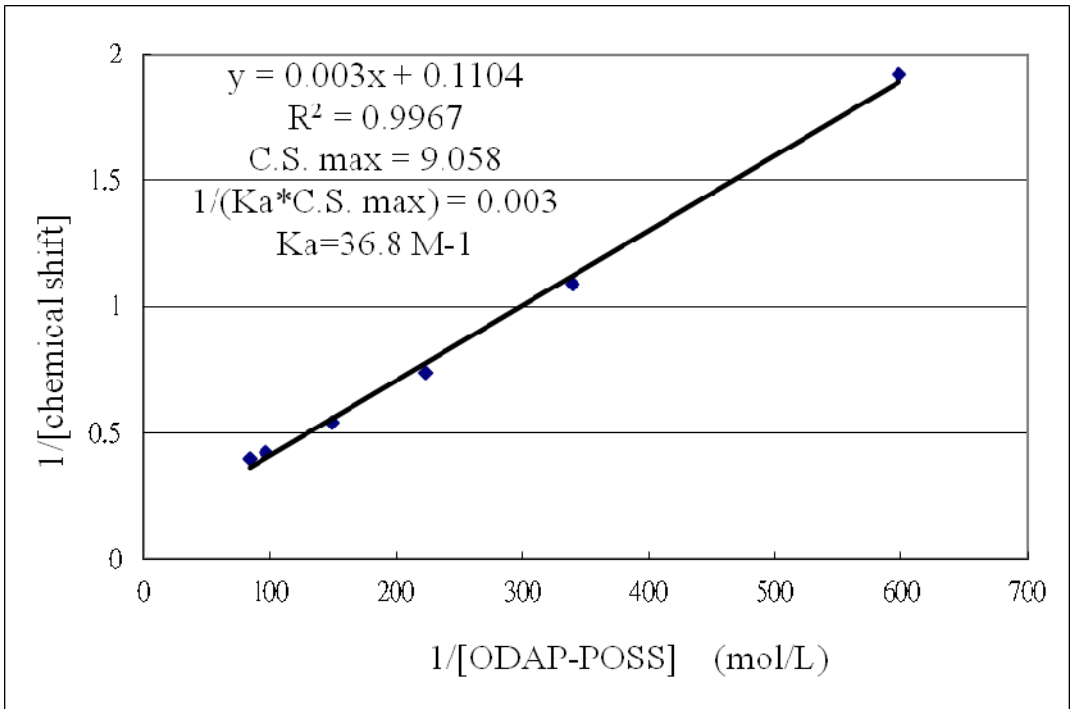

Figure S2. Benesi-Hildebrand plots of U-PY/ODAP-POSS association in tetrachloroethane.

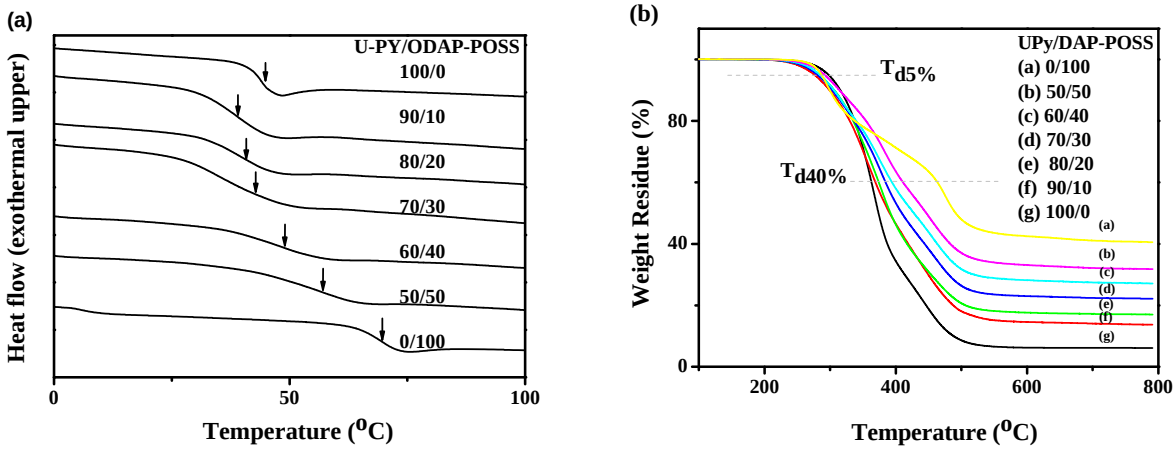

Figure S3. DSC thermograms (a) and TGA thermal degradation patterns (b) for U-PY/ODAP-POSS composites in various weight ratios.

Table S1. Thermal properties of U-PY/ODAP-POSS composites

Blend U-PY/ODAP-POSS	$T_{d5\%}$（℃）	$T_{d40\%}$（℃）	Char yield（%）	T_g（℃）
100/0	297	363	6	43
90/10	276	369	14	38
80/20	282	374	17	39
70/30	281	385	22	40
60/40	284	394	27	48
50/50	291	411	32	56
0/100	286	463	41	71

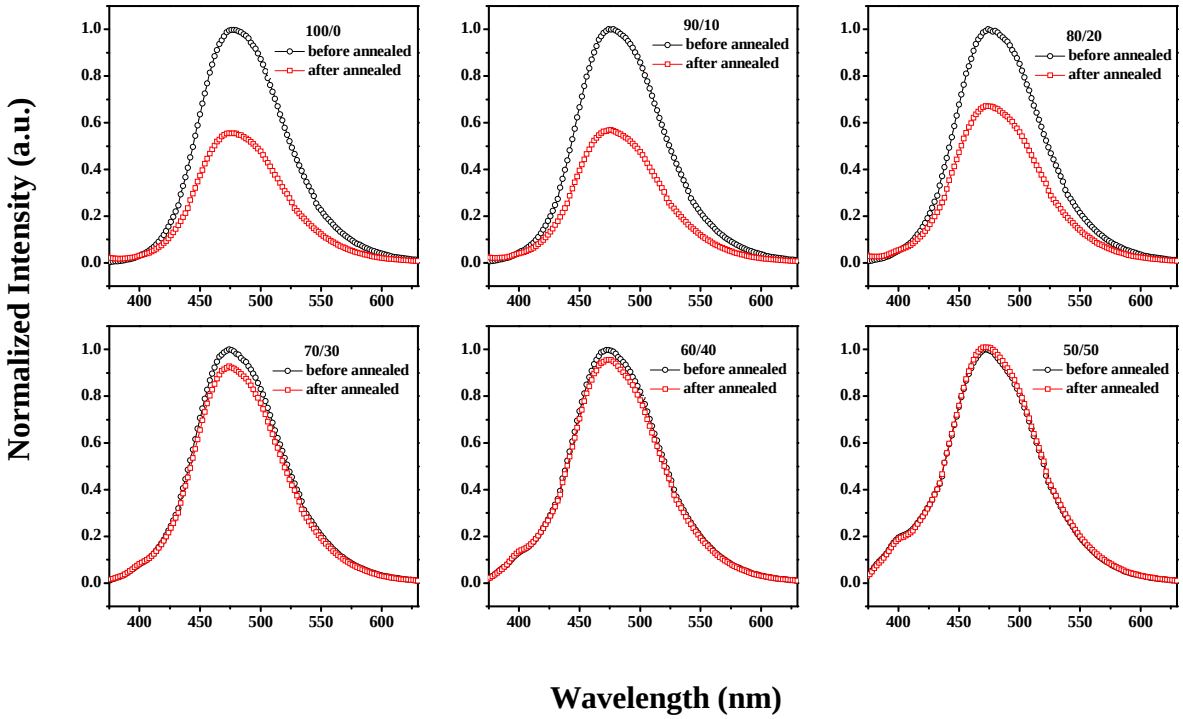

Figure S4. Thermal quenching of U-PY/ODAP-POSS composites in films after annealed at 150℃.

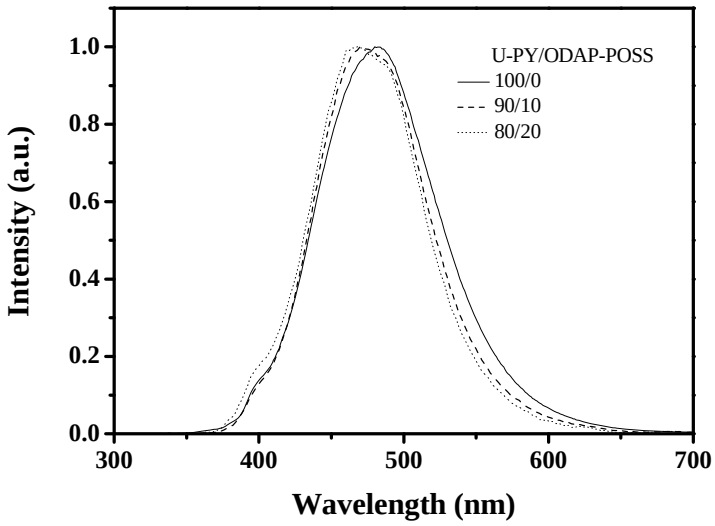

Figure S5. Electroluminescence based on the devices ITO/PEDOT:PSS/(U-PY/ODAP-POSS)/TPBI/LiF/Al.

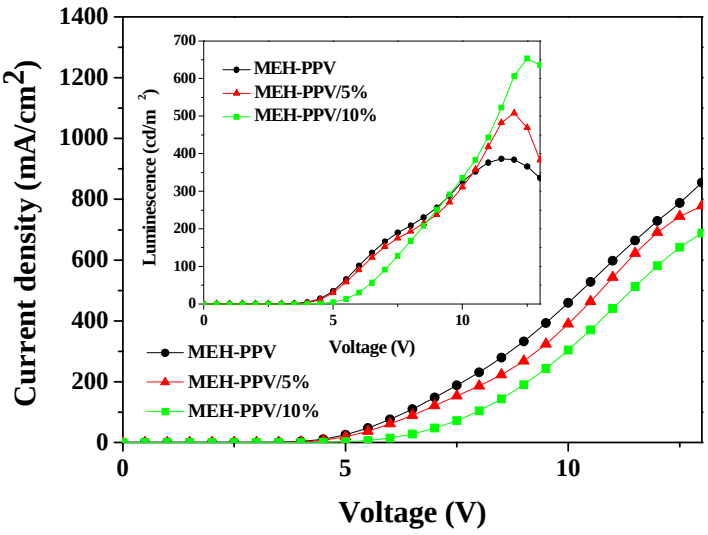

Figure S6. Voltage-Current density and Voltage-Luminescence characteristic of MEH-PPV/(U-PY/ODAP-POSS 90/10) based device.

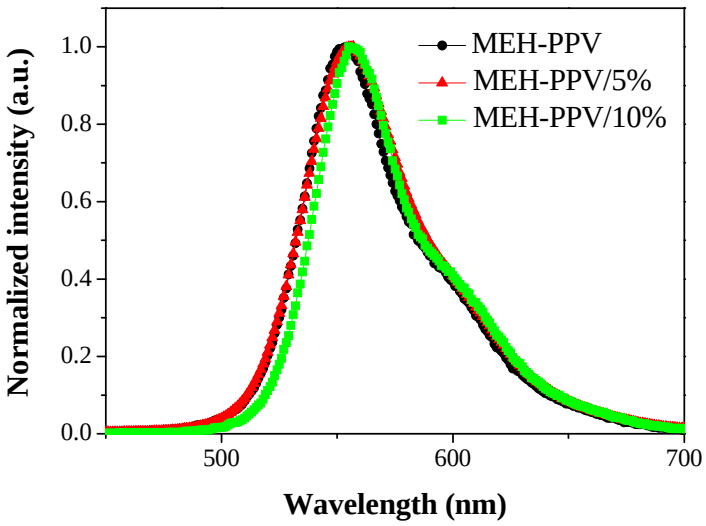

Figure S7. EL spectra of MEH-PPV/U-PY/ODAP-POSS (90/10) based device.

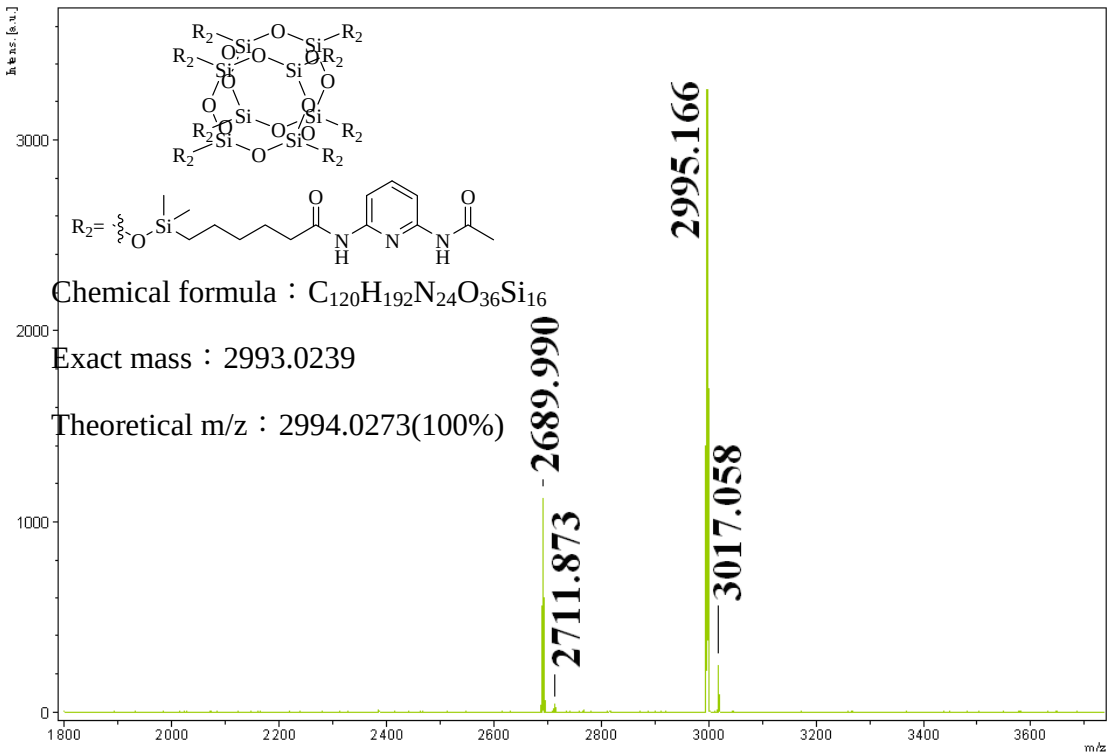

Figure S8. MALDI-TOF mass spectrum of ODAP-POSS.

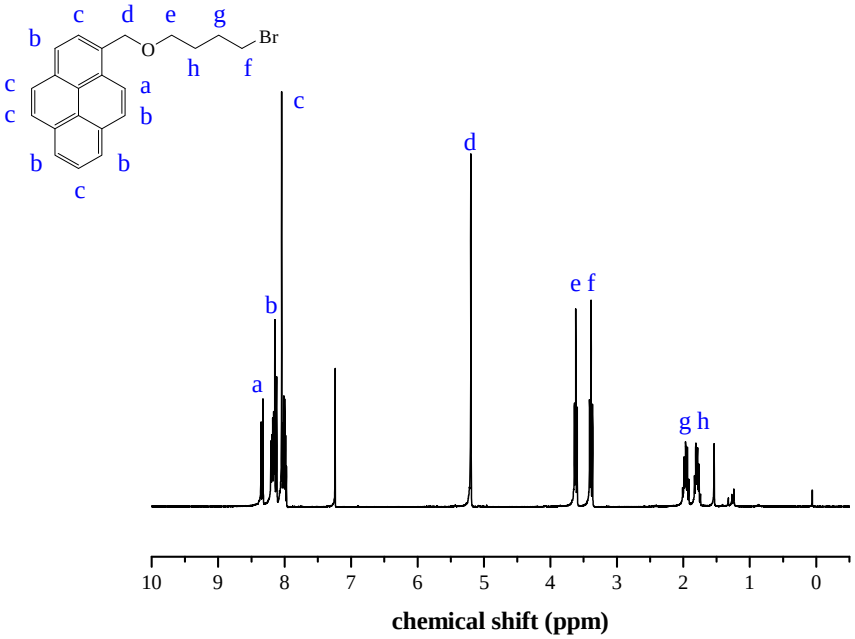

Figure S9. ^{1}H NMR spectra of 1-((4-bromobutoxy)methyl)pyrene.

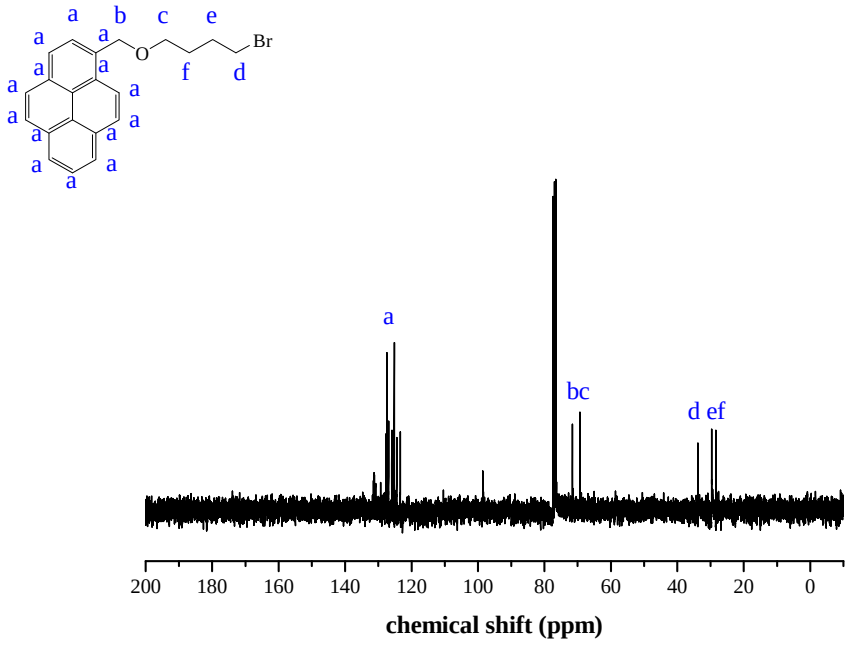

Figure 10. ^{13}C NMR spectra of 1-((4-bromobutoxy)methyl)pyrene.

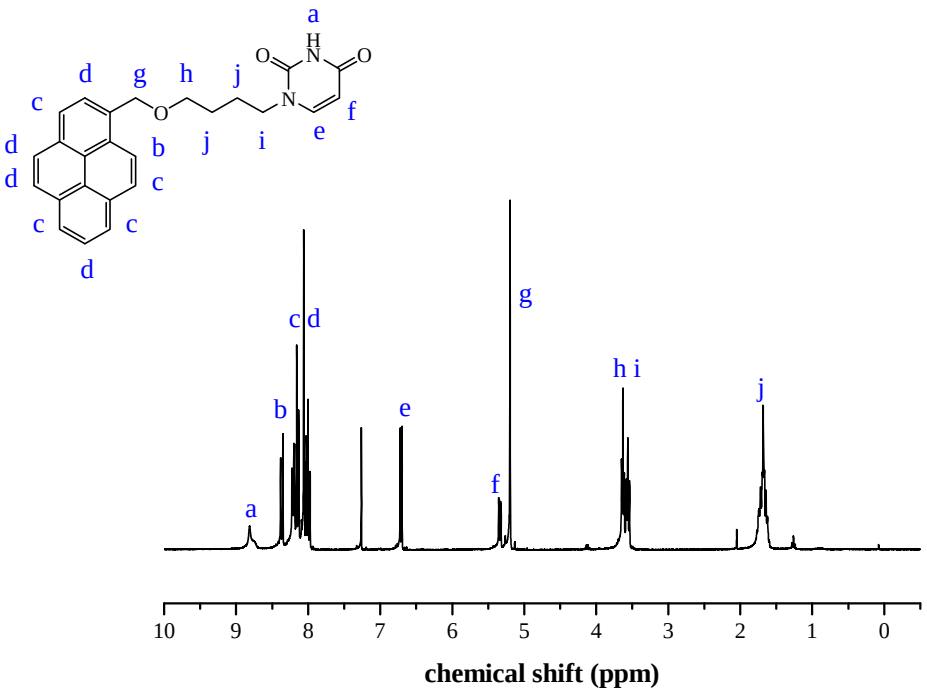

Figure S11. ^{1}H NMR spectra of 4-uracilbutyl-1-methylpyrene ether (U-PY).

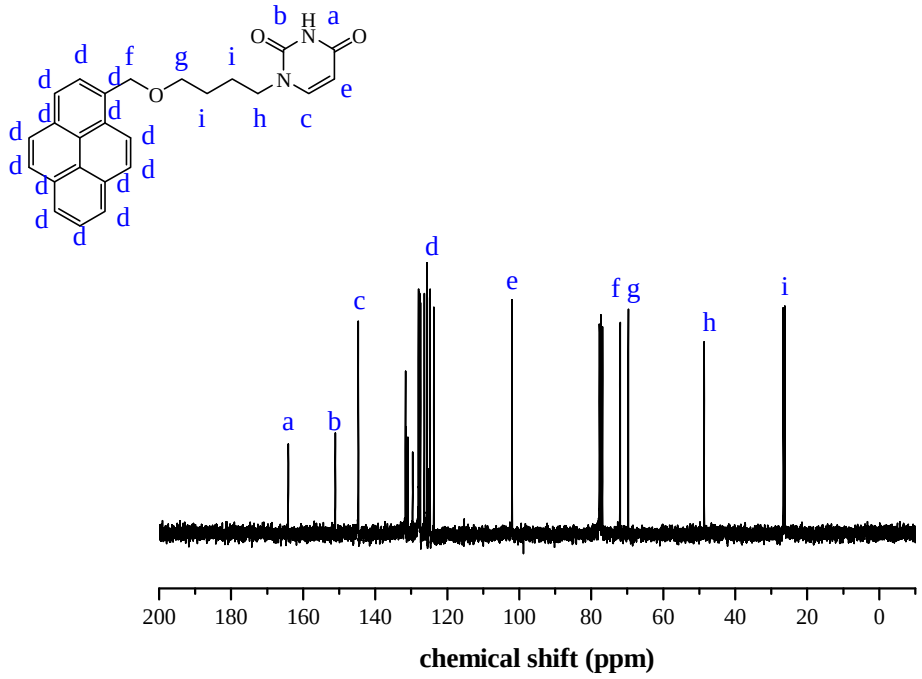

Figure S12. ^{13}C NMR spectra of 4-uracilbutyl-1-methylpyrene ether (U-PY).

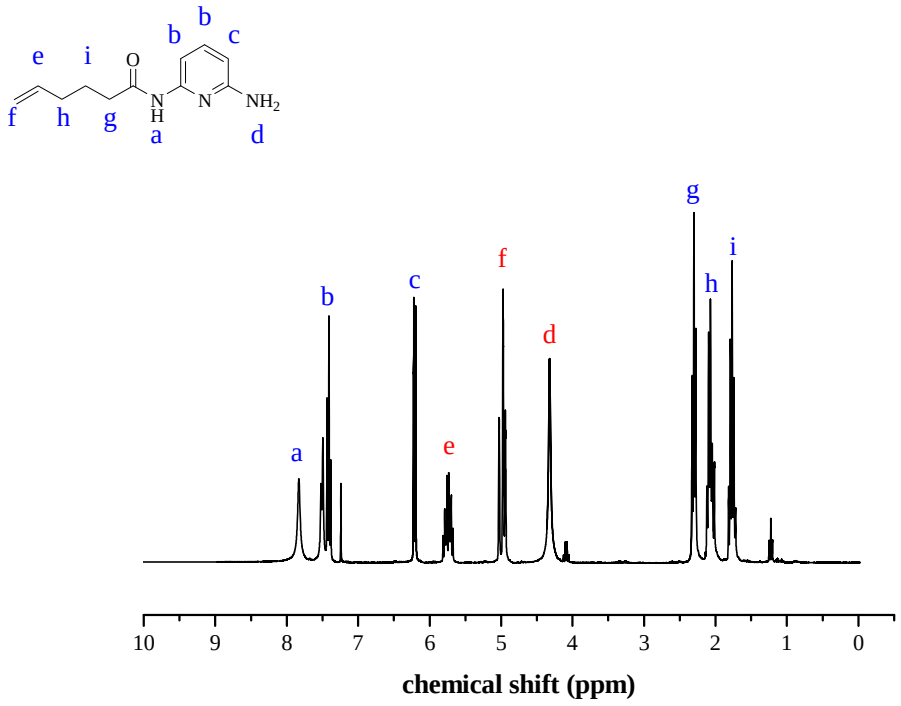

Figure S13. ^{1}H NMR spectra of N-(6-aminopyridin-2-yl)hex-5-enamide.

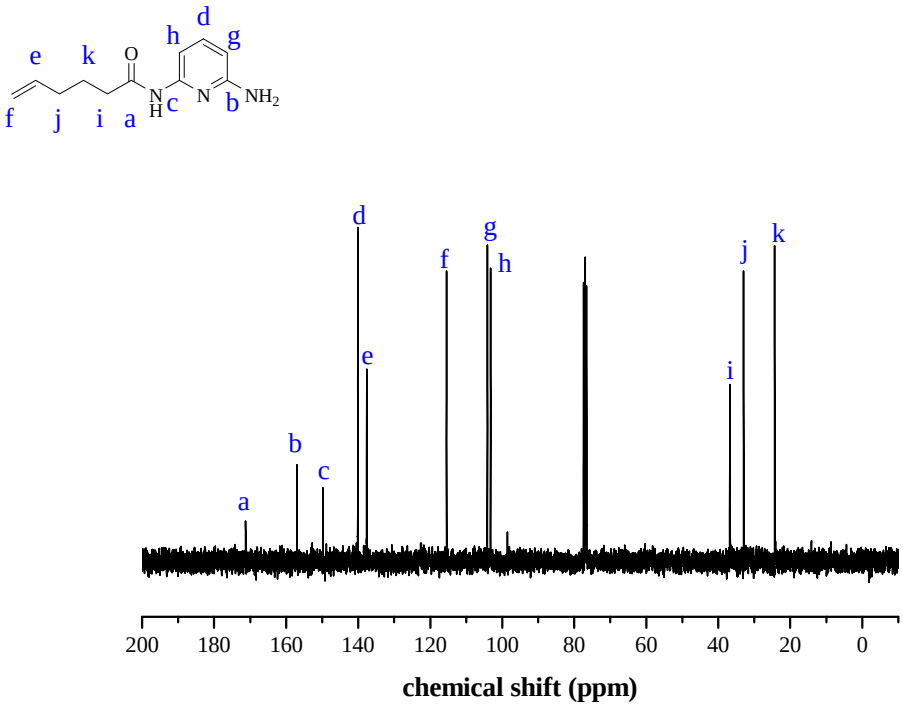

Figure S14. ^{13}C NMR spectra of N-(6-aminopyridin-2-yl)hex-5-enamide.

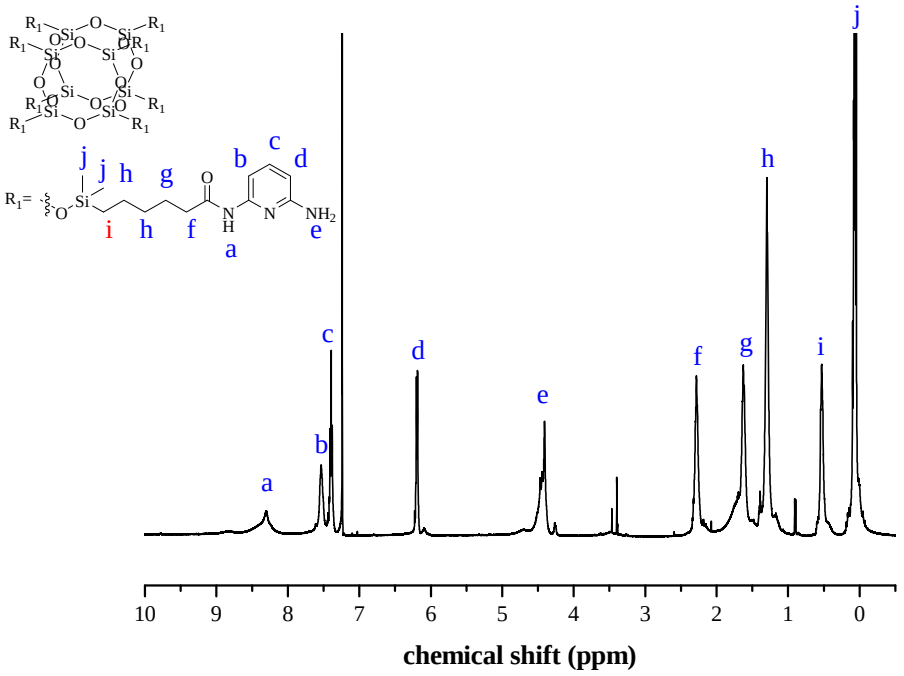

Figure S15. ^{1}H NMR spectra of Octakis[dimethyl(N-(6-aminopyridin-2-yl))siloxy]silsesquioxane.

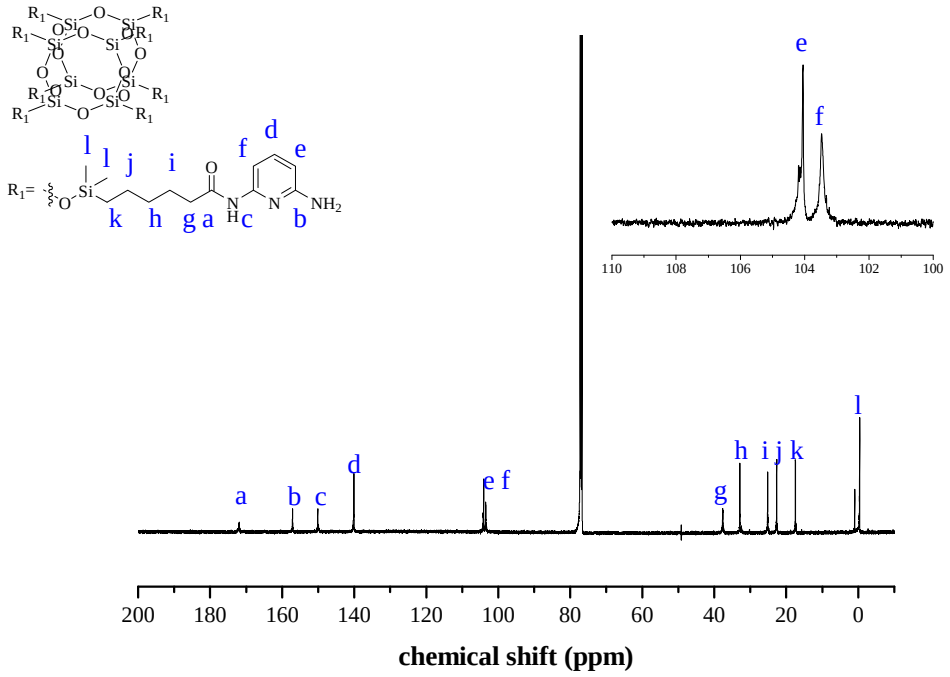

Figure S16. ^{13}C NMR spectra of Octakis[dimethyl(N-(6-aminopyridin-2-yl))siloxy]silsesquioxane.

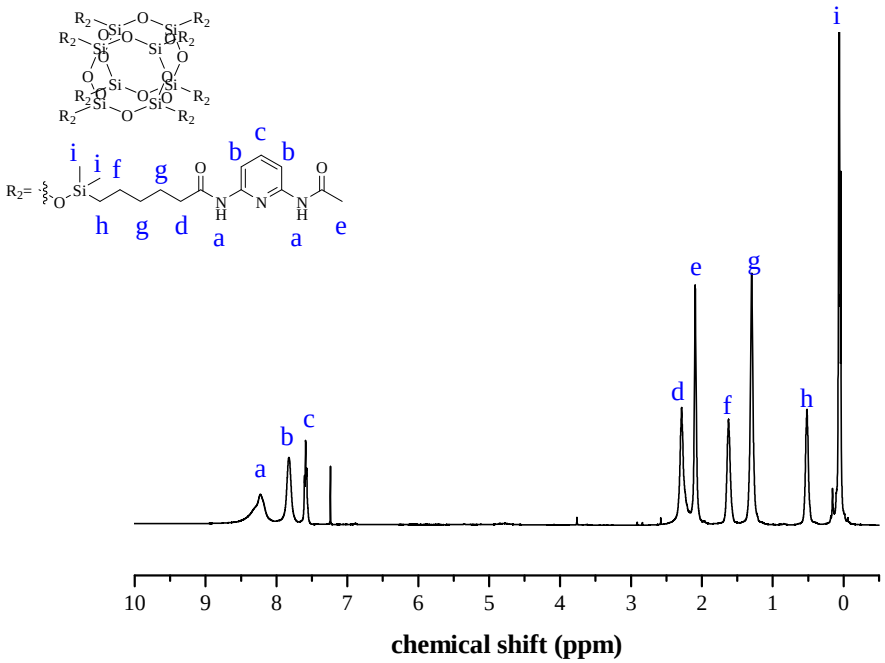

Figure S17. ^{1}H NMR spectra of Octakis[dimethyl(N-(6-acetamidopyridin-2 yl))siloxy] silsesquioxane (ODAP-POSS).

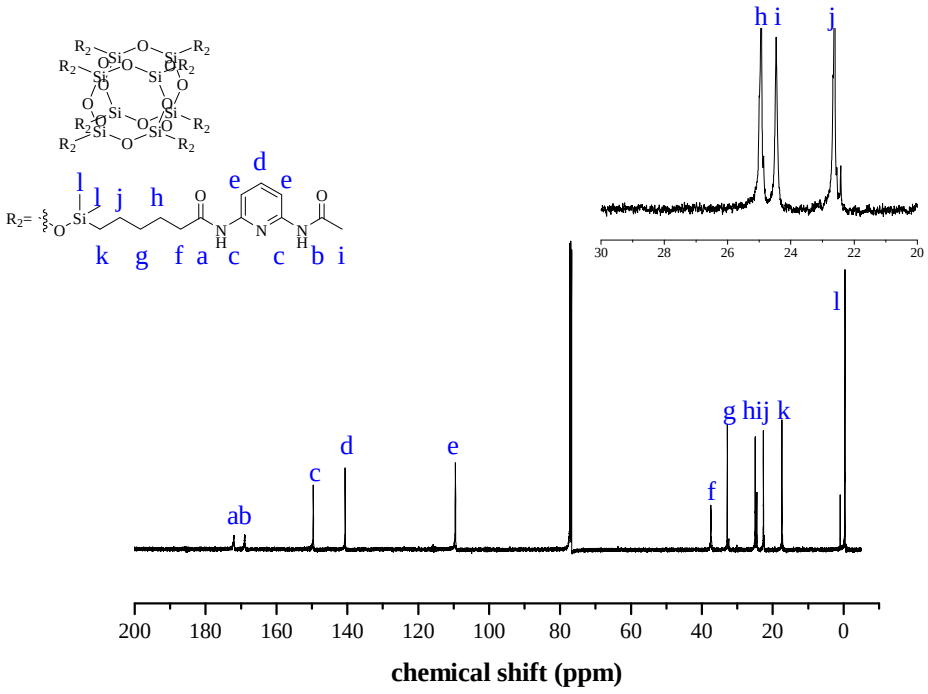

Figure S18. ^{13}C NMR spectra of Octakis[dimethyl(N-(6-acetamidopyridin-2 yl))siloxy] silsesquioxane (ODAP-POSS).