

Supporting Information

Fused Arenes-Functionalized Polyhedral Oligomeric Silsesquioxanes as Thermoelectric Materials

Paige Huzyak, John Ferguson, Jeremiah Sharpsteen, Lan Xu, Soundaram Jeevarathinam Ananthakrishnan,^a and Hemali Rathnayake*

**Department of Chemistry, Western Kentucky University, Bowling Green, KY 42101*

* Corresponding authors. Tel.: +1-270-745-6238; fax: +1-270-745-5361.

E-mail address: hemali.rathnayake@wku.edu (Hemali Rathnayake).

Figure S1: FT-IR spectrum of POSS-ANT.

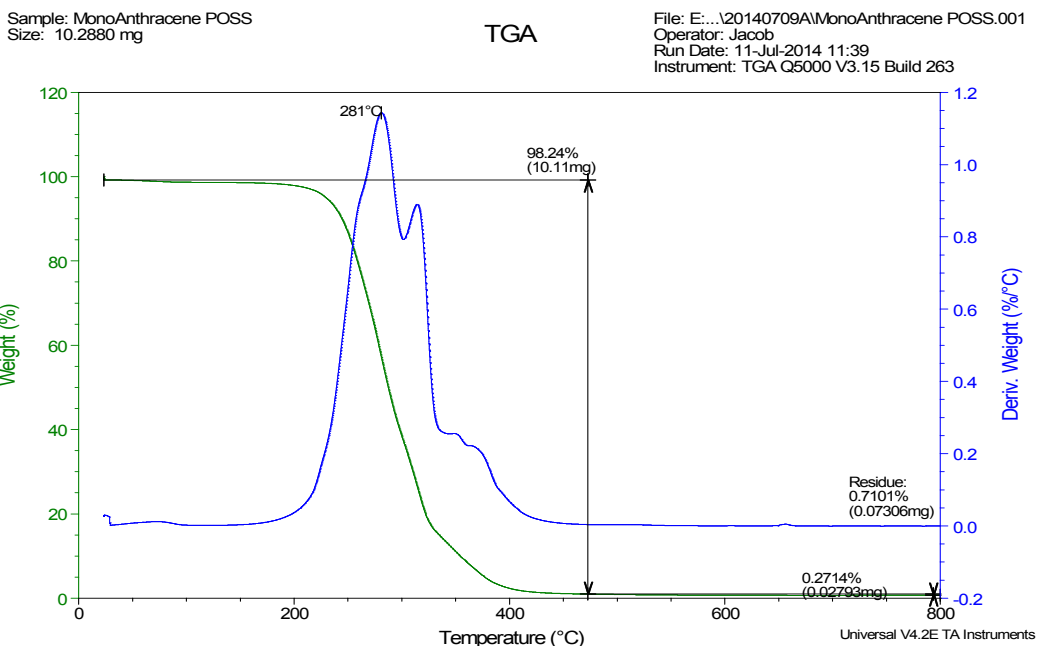


Figure S2: (a) TGA curve of POSS-ANT

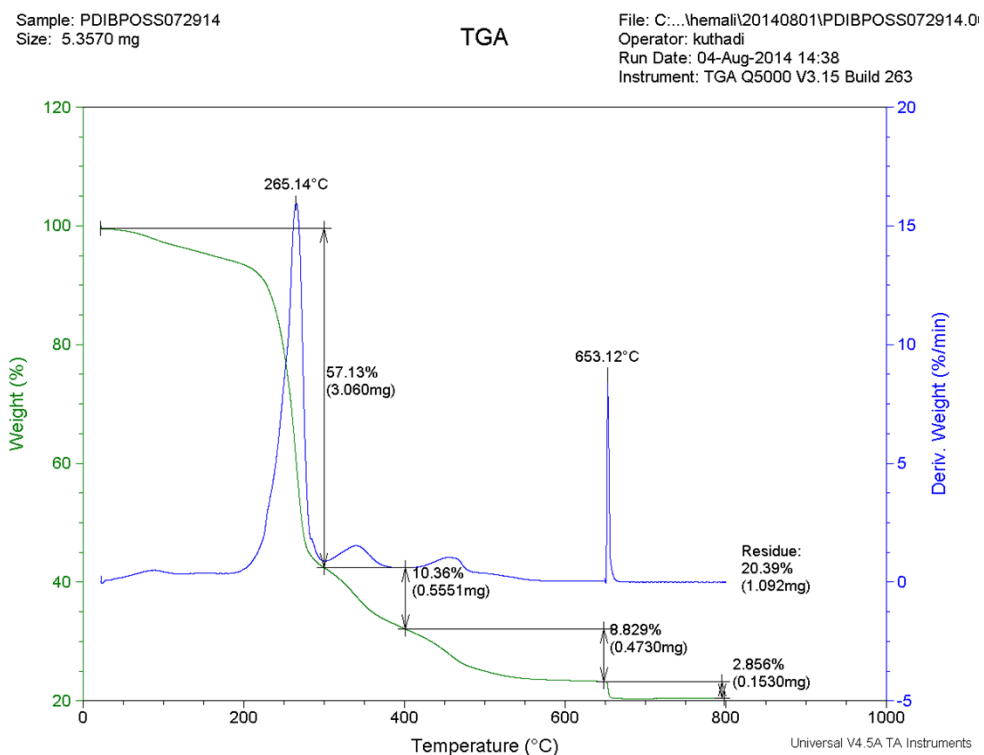


Figure S2: (b) TGA curve of POSS-PDI-POSS

Figure S3: UV-visible spectra for the dilution series of POSS-PDI-POSS.

Figure S4: IV curves for drop casted films of POSS-ANT (left) and POSS-PDI-POSS (right) at room temperature and at 50 °C

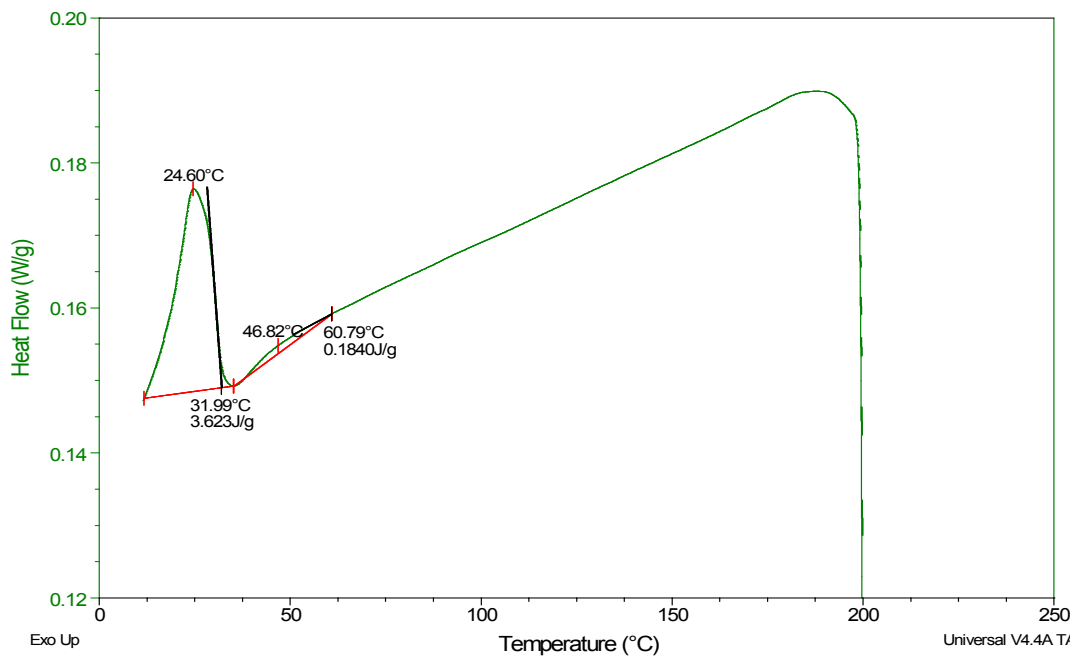
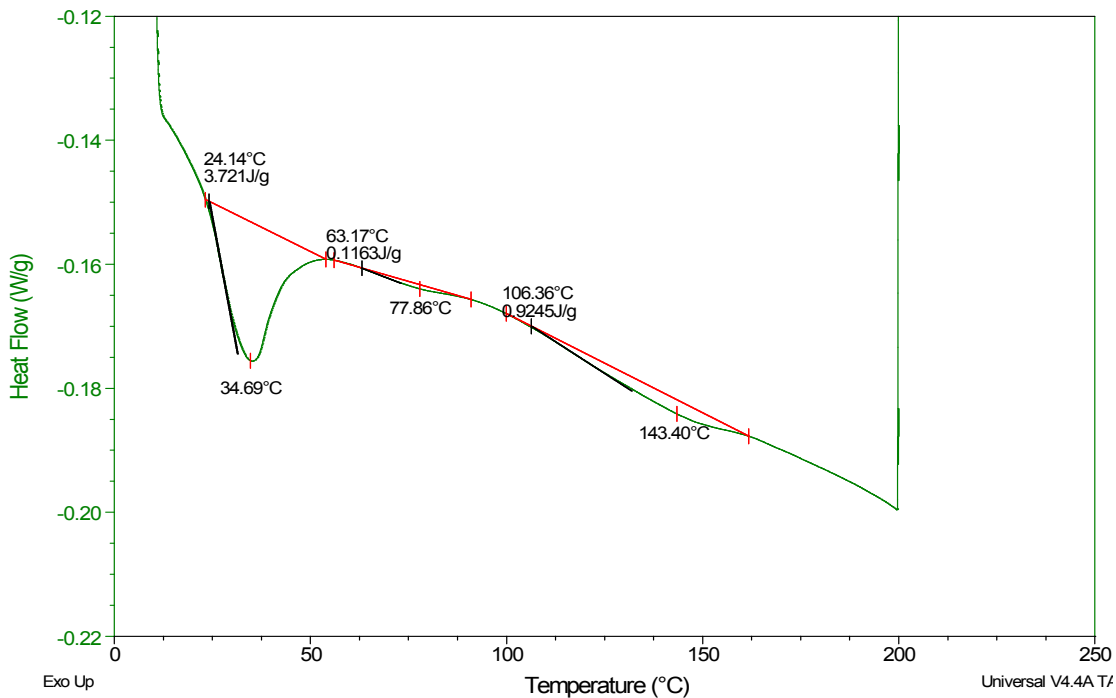


Figure S5: Heating (top) and cooling (bottom) curves of DSC traces for POSS-ANT

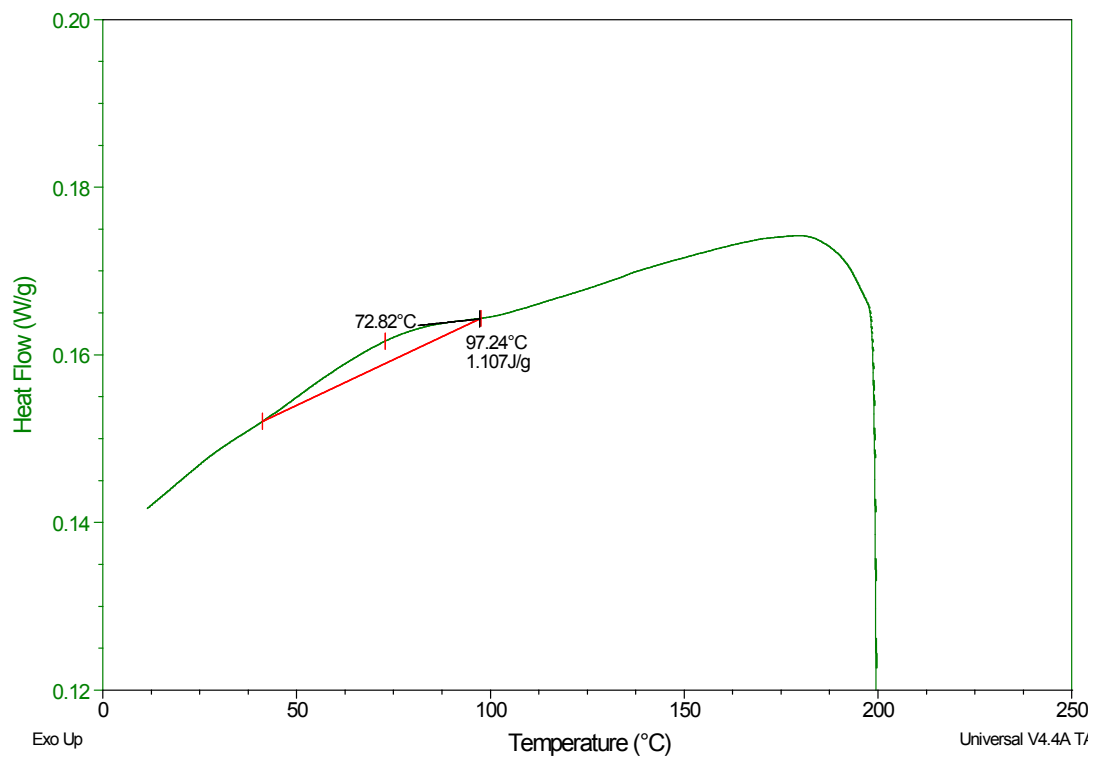
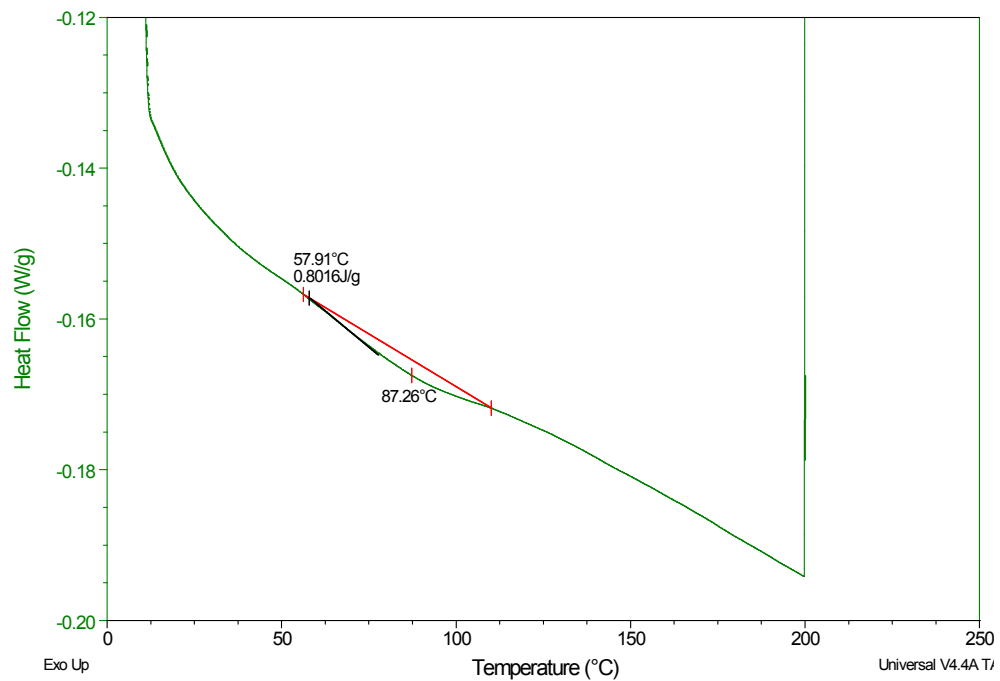


Figure S6: Heating (top) and cooling (bottom) curves of DSC traces for POSS-PDI-POSS.

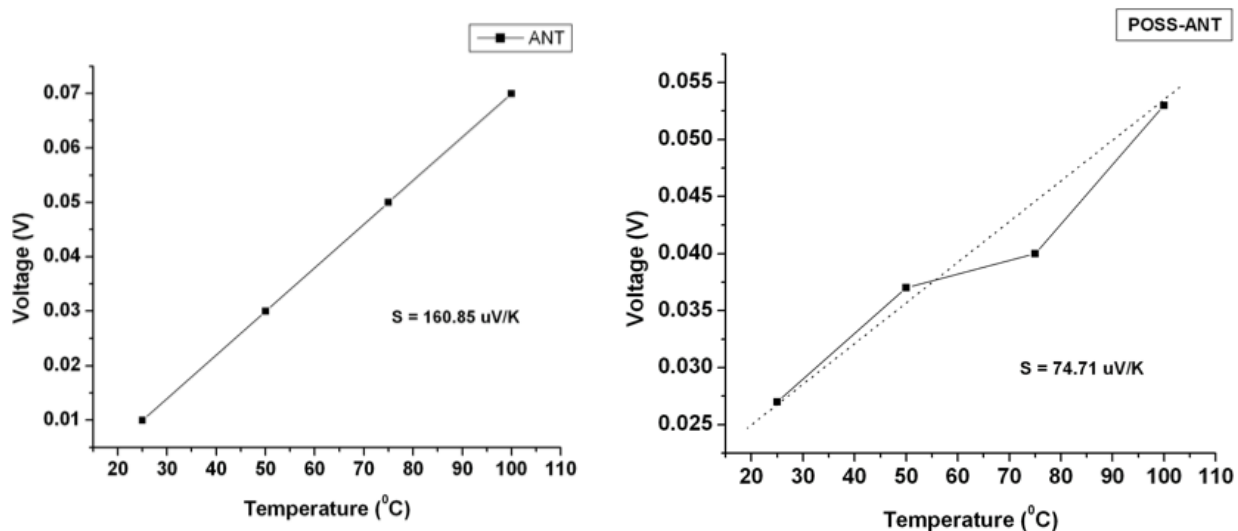


Figure S7: Voltage vs temperature curves for spin coated (right) and drop casted (left) films of POSS-ANT

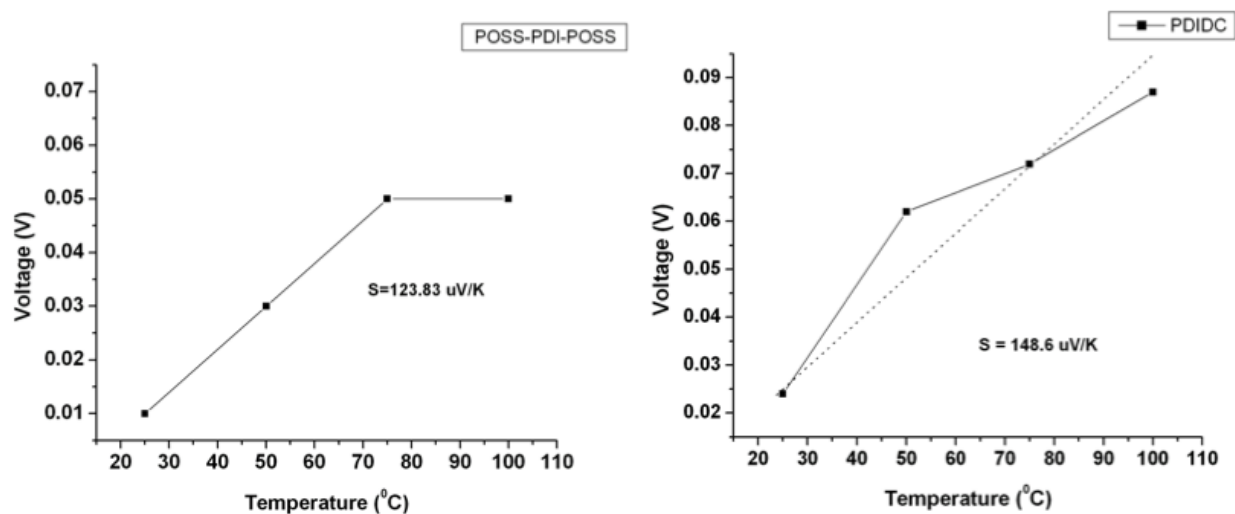


Figure S8: Voltage vs temperature curves for spin coated (right) and drop casted (left) films of POSS-PDI-POSS

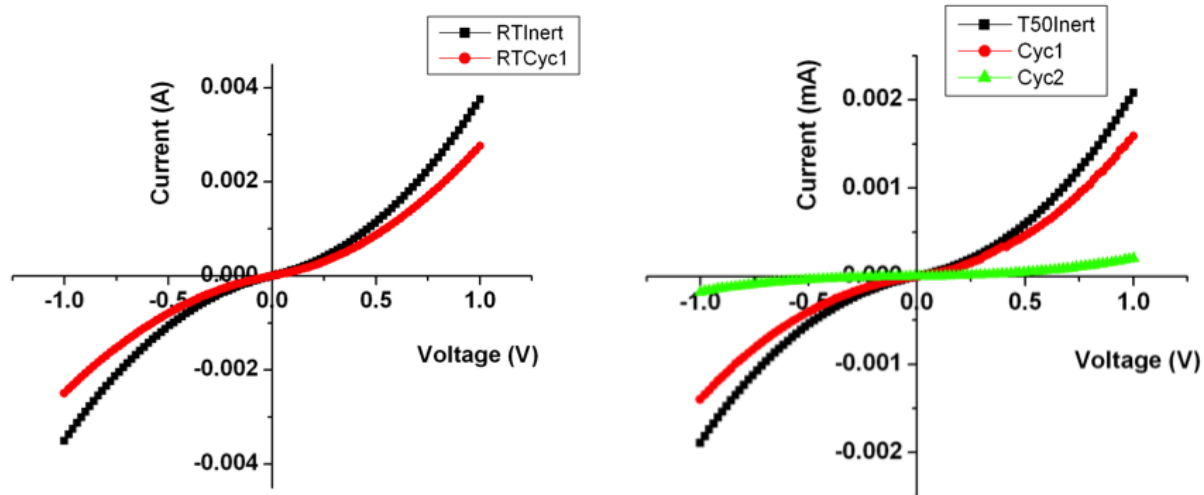


Figure S9: Comparison IV plots obtained in inert atmosphere and in open air while two cycles of heating and cooling.

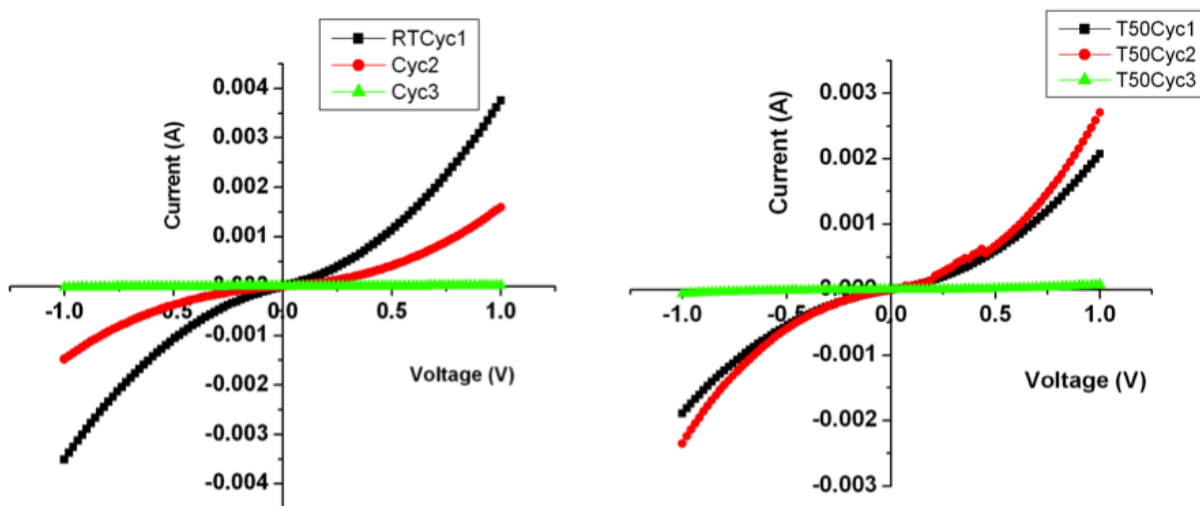


Figure S10: Comparison IV plots obtained in inert atmosphere while three cycles of heating to 50 °C and cooling to room temperature.

IR traces of POSS-ANT

IR traces of POSS-PDI-POSS

Figure S11: IR traces of POSS-ANT and POSS-PDI-POSS after annealed to 50, 75, and 100 °C

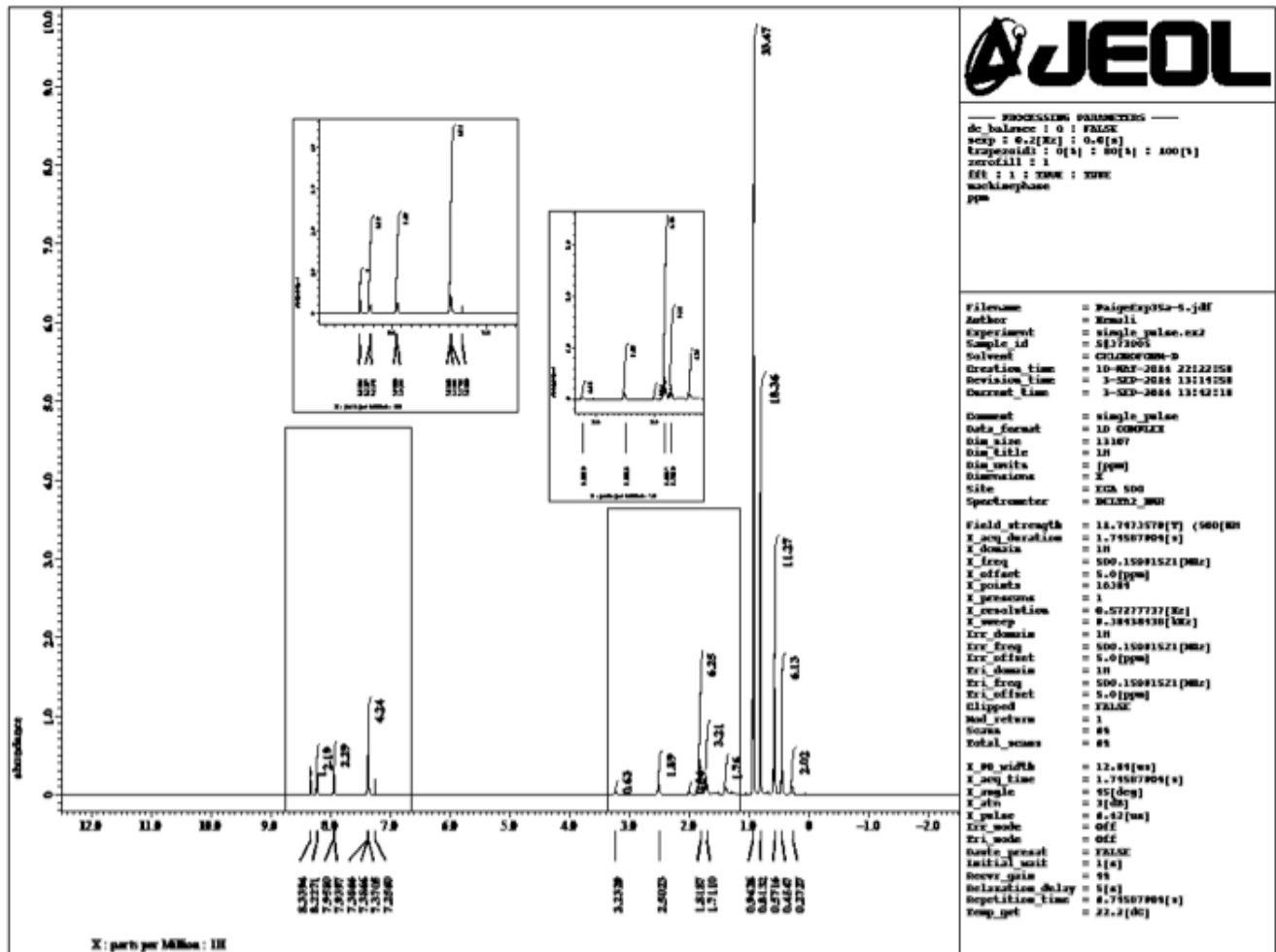


Figure S12: ¹H-NMR spectrum of POSS-ANT.

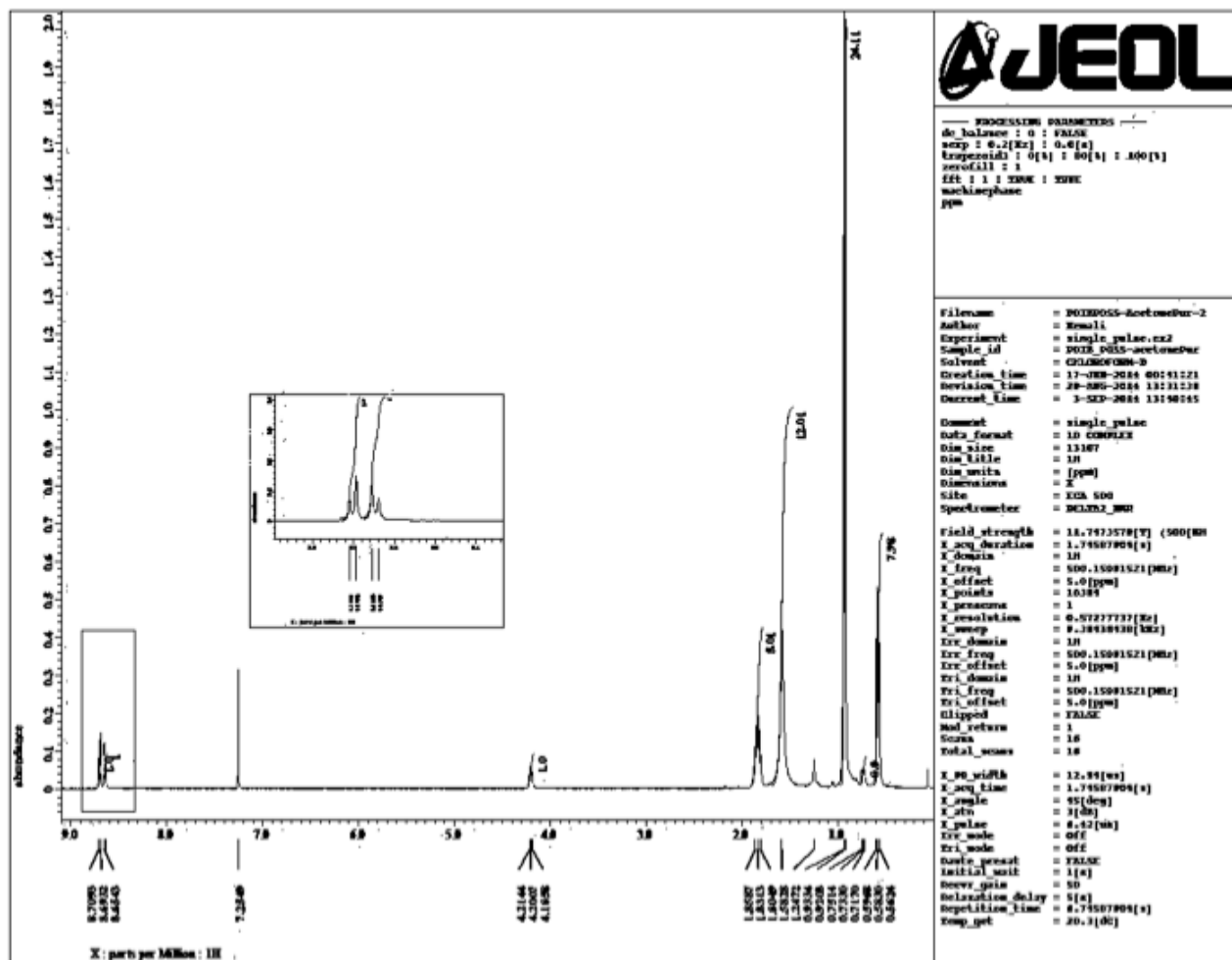


Figure S13: ¹H-NMR spectrum of POSS-PDI-POSS.