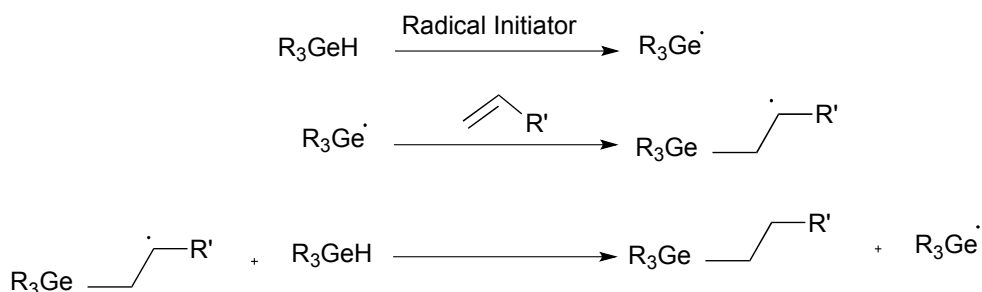


Supporting Information

Synthesis and Functionalization of Polymer Networks via Germane-Ene Chemistry

Ryan Guterman, Tristan Harrison, Elizabeth R. Gillies, and Paul J. Ragogna

Department of Chemistry and Centre for Advanced Materials and Biomaterials Research (CAMBR), The University of Western Ontario, London, ON Canada N6A 5B7



Scheme S1: Mechanism for the radical addition of germanes to olefins.

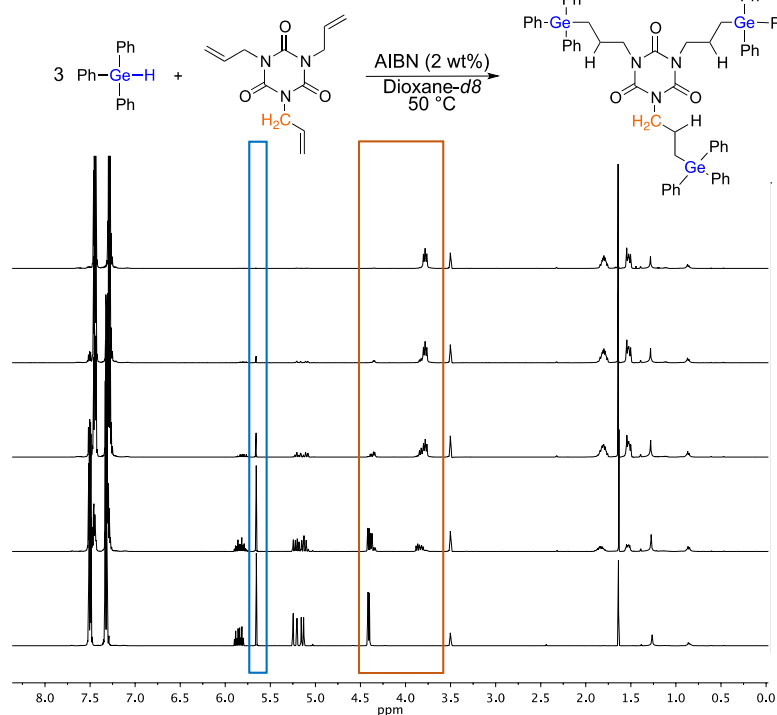


Figure S1: NMR spectra of the reaction consisting of Ph_3GeH and TTT. Integrations of the Ge-H peak ($\delta = 5.7$) were compared to the total integration of the shifting methylene protons of TTT ($\delta = \sim 4.4$ in the starting material shifting to $\delta = \sim 3.8$ in the product).

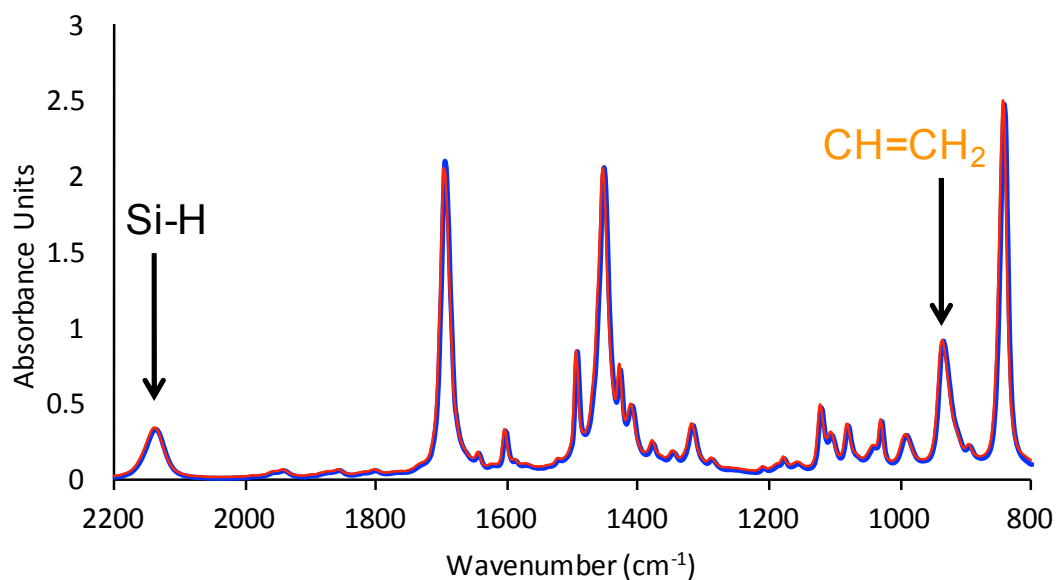


Figure S2: ATR-FTIR spectra of the reaction of Ph_2SiH_2 with TTT (blue trace – T_0 , red trace 90 min).

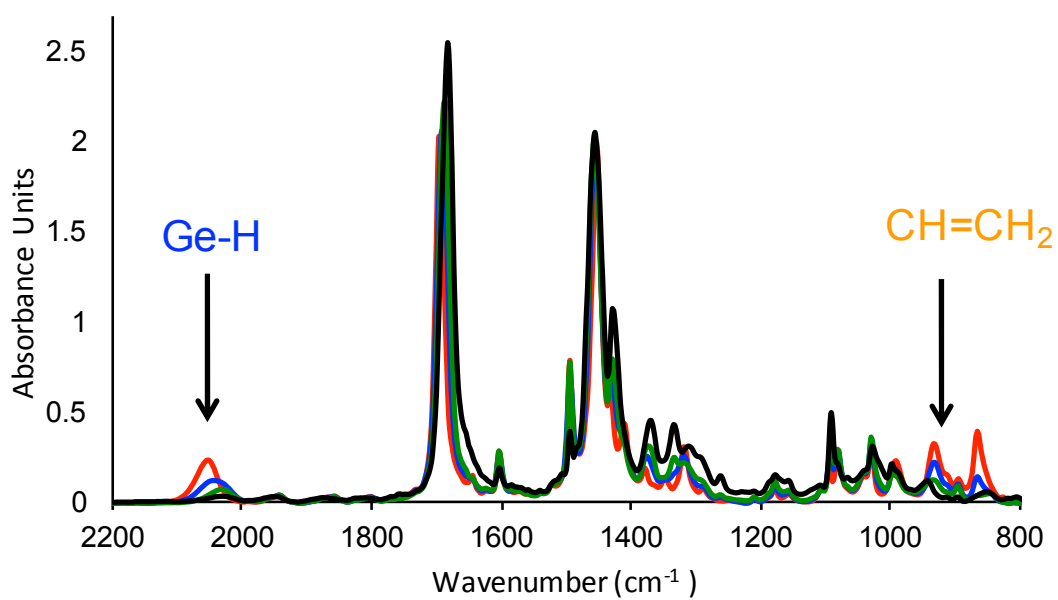


Figure S3: ATR-FTIR spectra of the reaction of Ph_2GeH_2 with TTT (red trace – T_0 , blue trace 15 min, green trace – 30 min, black trace – 120 min).

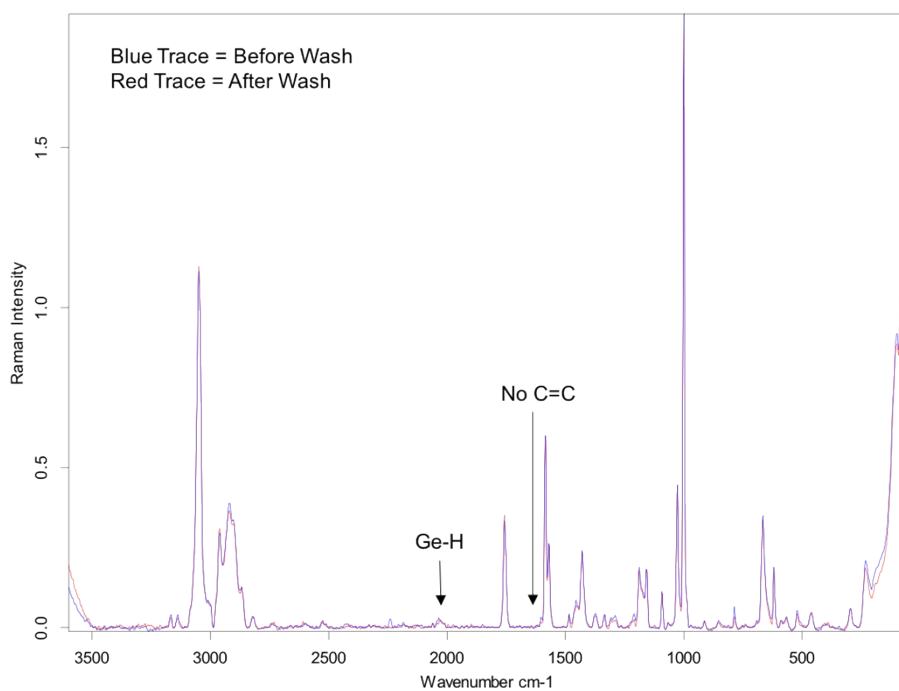


Figure S4: Raman spectrum before and after washing the polymer network consisting of PH_2GeH_2 and TTT. Complete C=C bond conversion was observed.

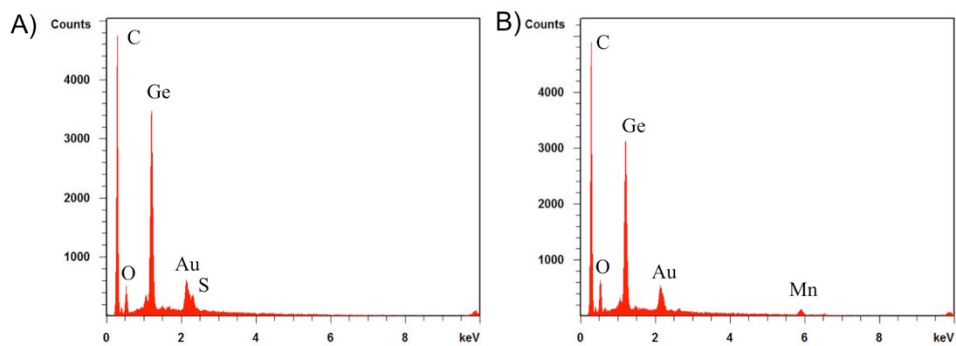


Figure S5: A) EDX spectrum for Ge-SH polymer. B) EDX spectrum for Ge-Mn polymer.

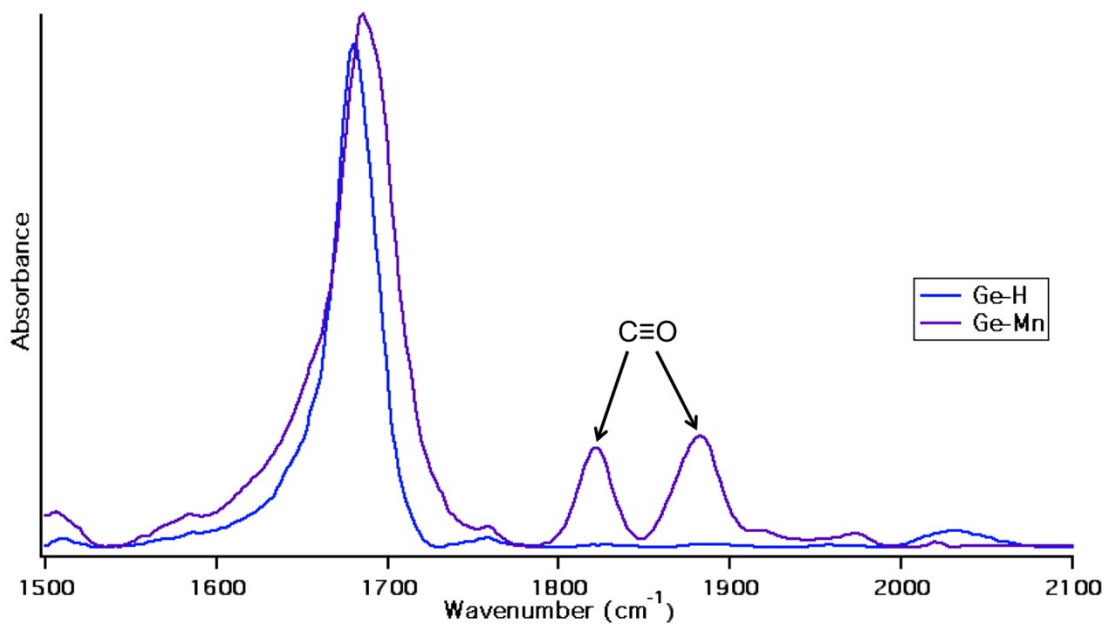


Figure S6: FT-IR spectra of germane-ene polymer before (Ge-H) and after (Ge-Mn) functionalization using $(C_5H_5)Mn(CO)_3$.