

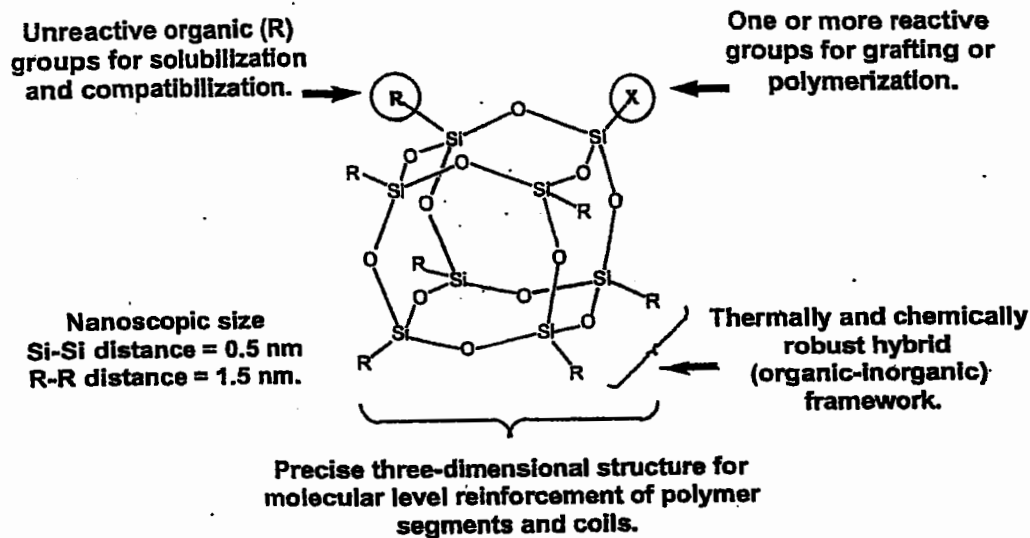


Figure 1. The anatomy of a POSS™ Nanostructured Chemical.

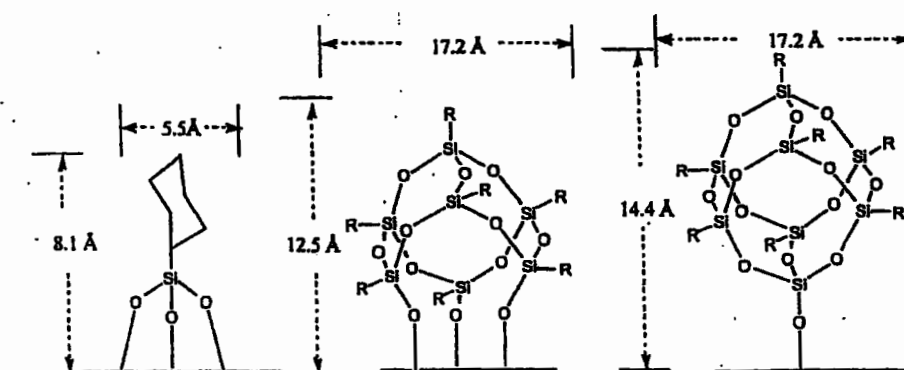


Figure 2. Physical size relationships of a traditional silane applied to a surface as a monolayer (left) and Nanostructured™ Coupling Agents applied as monolayers.

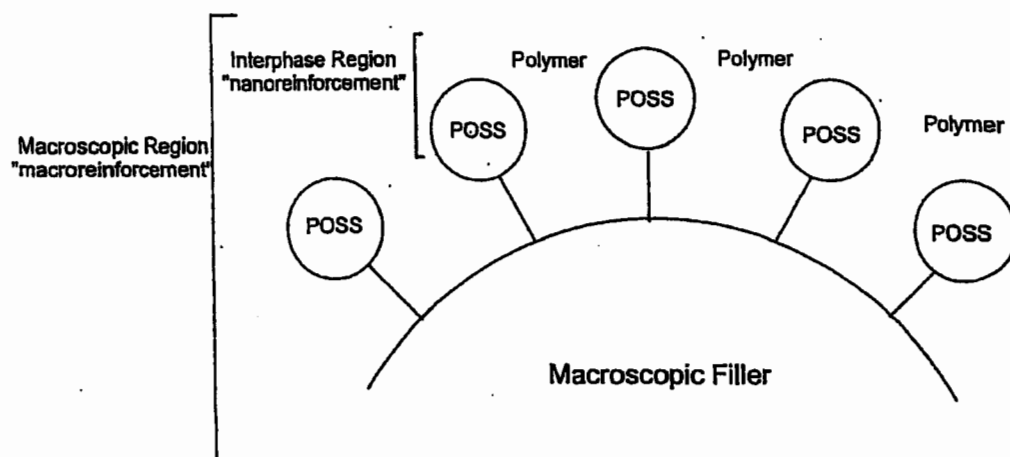


Figure 3. Multi length scale reinforcement (nano-macro) provided through POSS-surface modification of macroscopic surfaces.

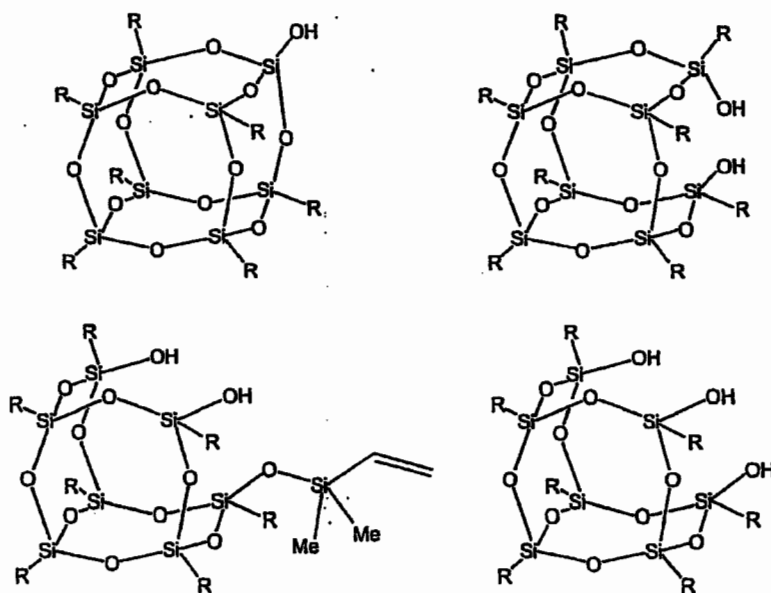


Figure 4. Structural representations and for POSSTM-Silanol coupling agents R can be a functionalized group suitable for coupling to a polymer.

3/4

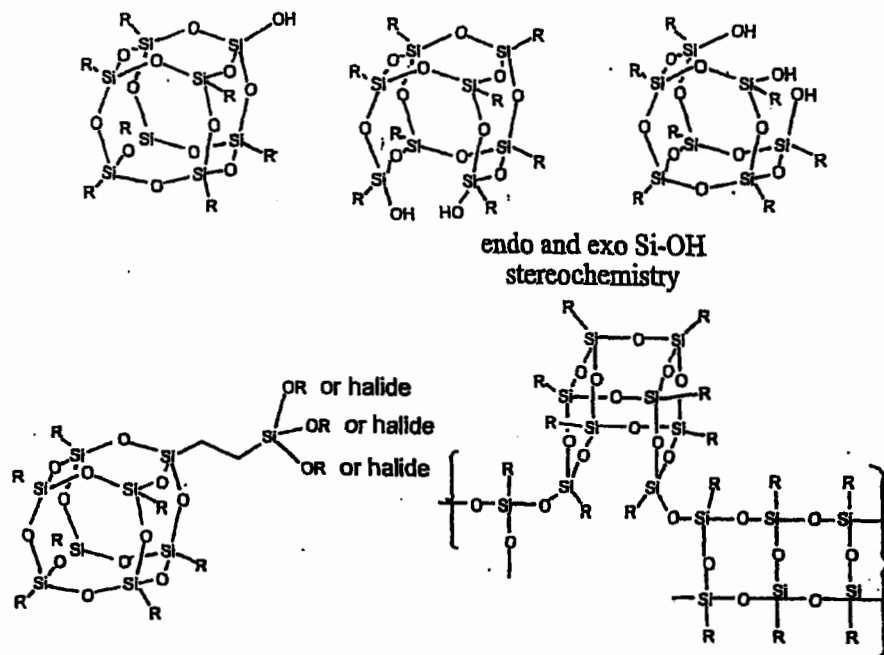


Figure 5. Examples of Nanostructured™ Surface Modification Agents that include POSS-mono, di, tri silanols, POSS-Siloxides, halides, and POSS-resins.

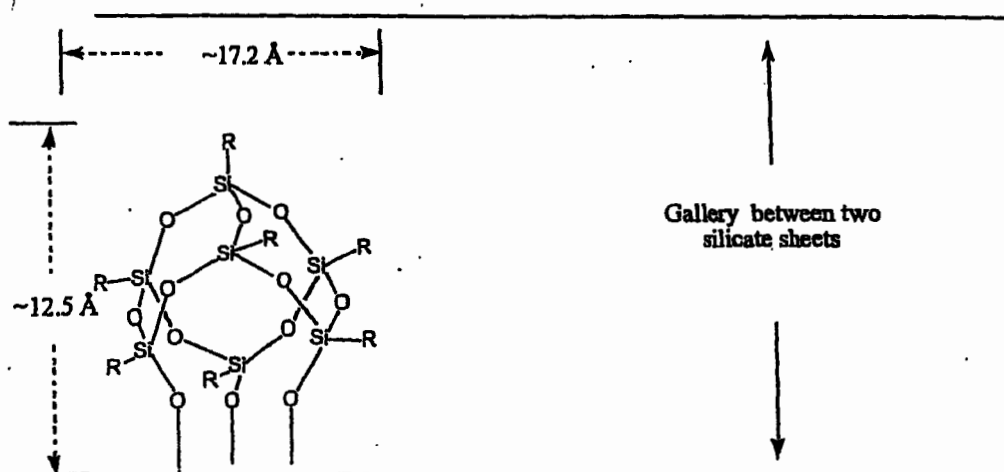


Figure 6. Representative intercalation/exfoliation of two silicate sheets by POSS.

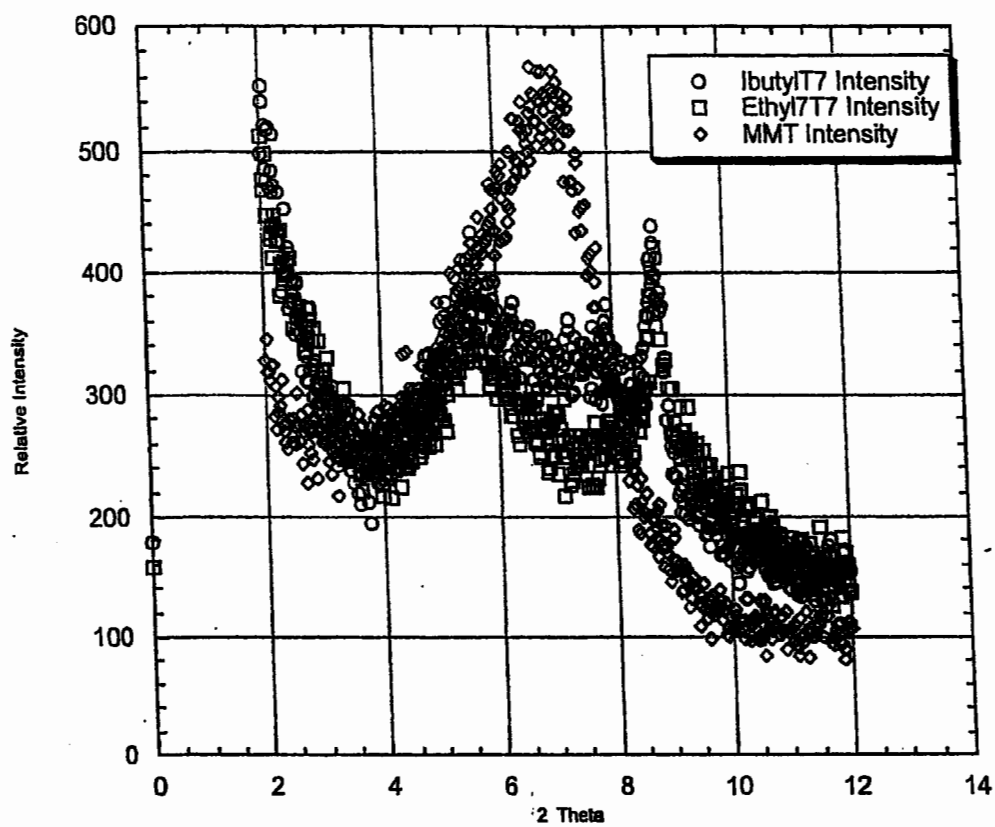


Figure 7. Selected X-ray diffraction maxima for potassium montmorillonite (MMT) and MMT exfoliated with POSSTM-Silanols.