Journal of
Composites Science

MDPI

Article

Influence of Component Ratio on Thermal and Mechanical Properties of Terpenoid-Sulfur Composites

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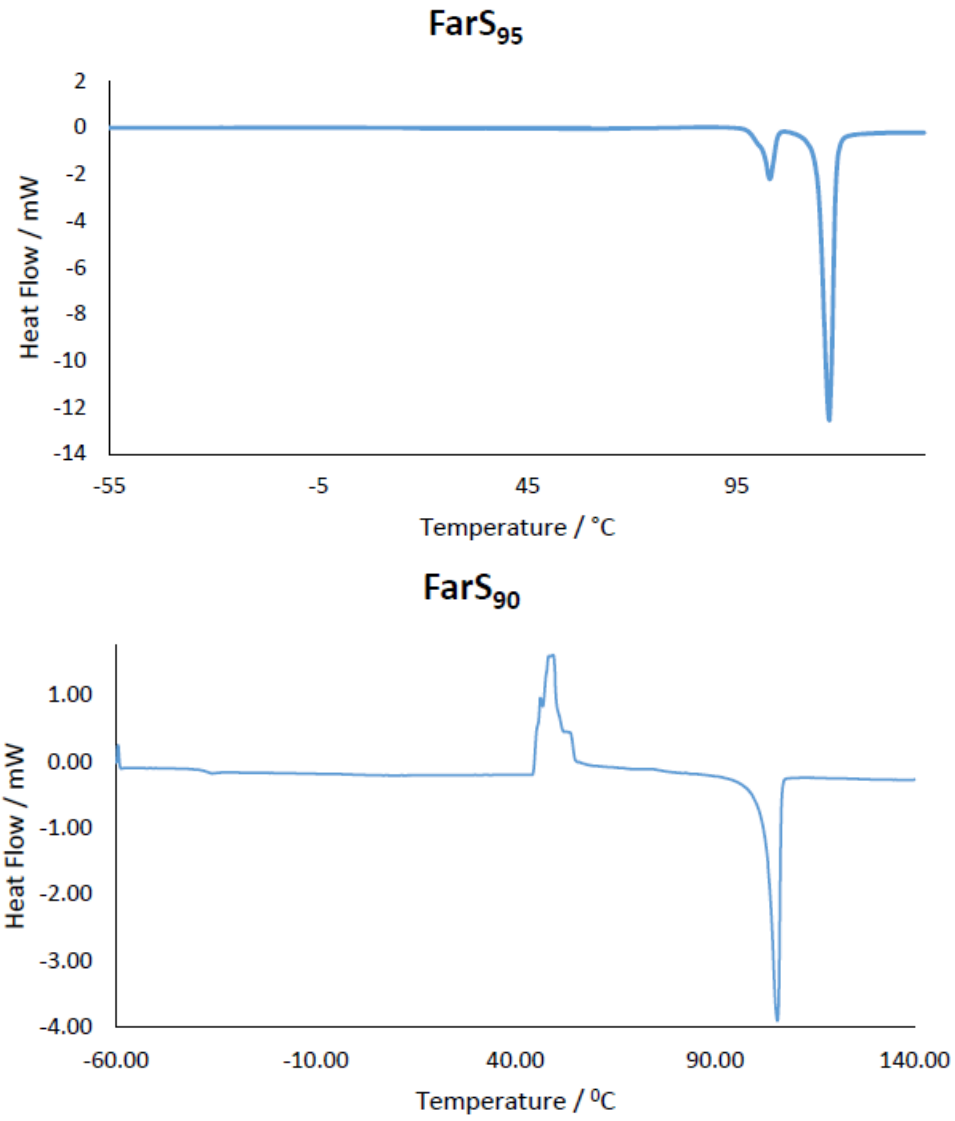
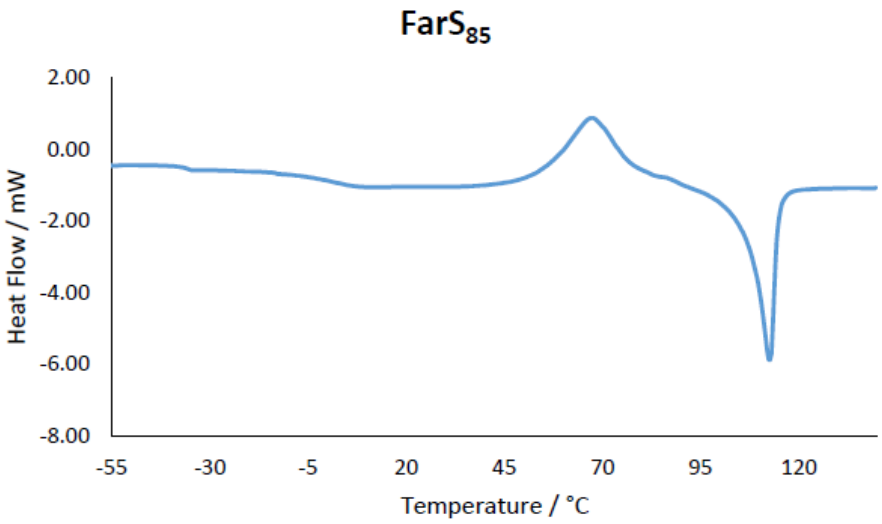
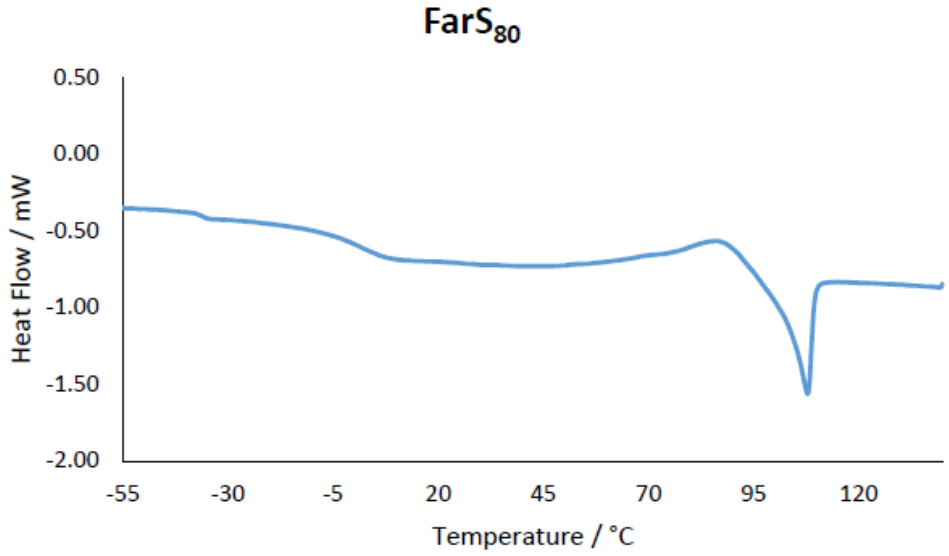
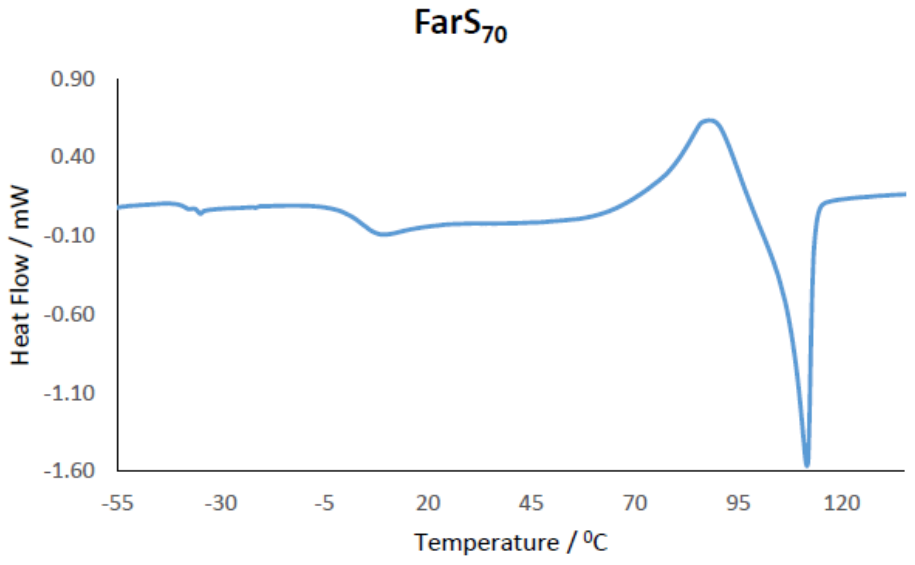



FarS85
2.00
0.00
-2.00
-4.00
-6.00
-8.00
Heat Flow / mW
-55
-30
-5
20
45
70
95
120
Temperature / °C

(CONT'D)


FarS80
0.50
0.00
-0.50
-1.00
-1.50
-2.00
Heat Flow / mW
-55
-30
-5
20
45
70
95
120
Temperature / °C


FarS70
0.90
0.40
-0.10
-0.60
-1.10
-1.60
Heat Flow / mW
-55
-30
-5
20
45
70
95
120
Temperature / °C

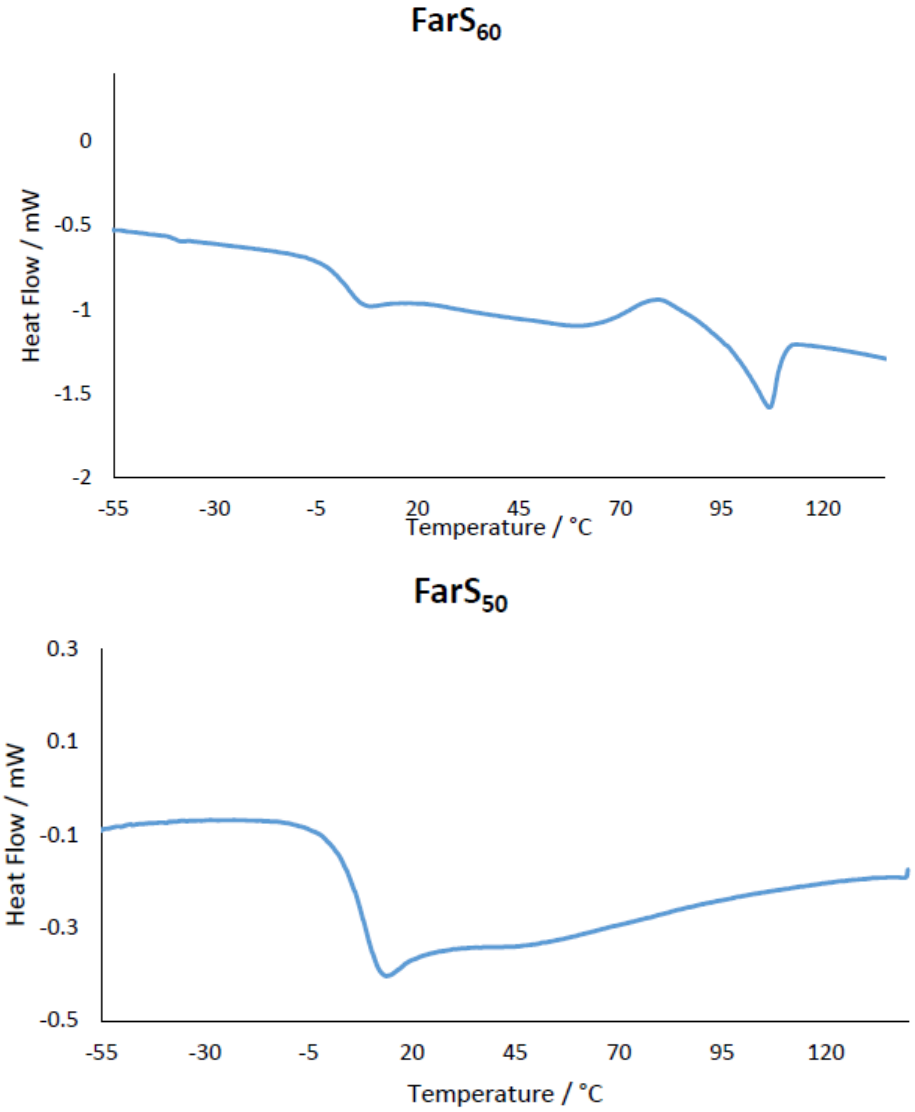
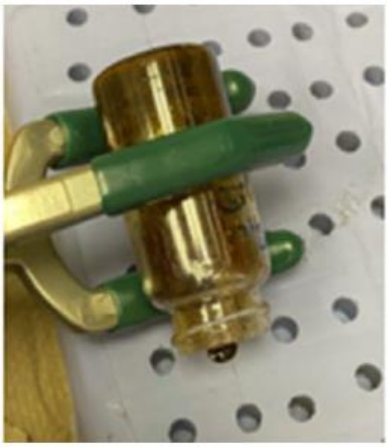
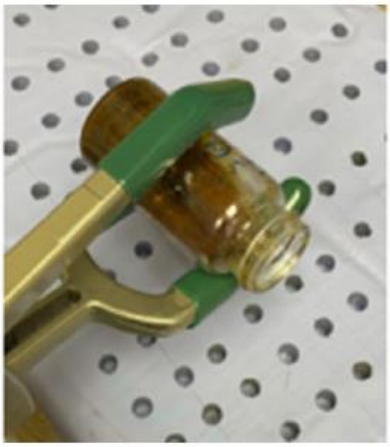


Figure S1. DSC traces for farnesol-sulfur composites **FarSx**. The traces are given for the third heating cycle.

Step 1: Melt the composite at 120–150 °C. Tilting the vial so that the side glass remains hot is helpful to maintain fluidity as the liquid is poured in step 2.



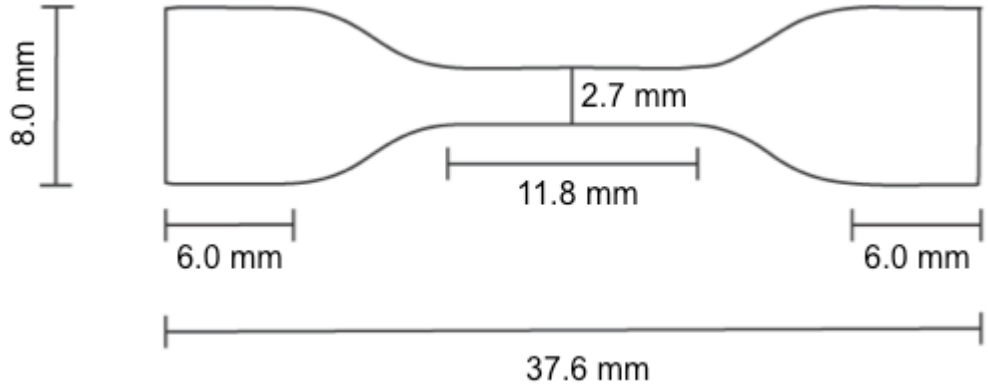
Step 2: Begin pouring at a height that is high enough above the mold opening that the liquid stream is narrow enough to avoid the sides of the mold. The is determined through trial and error and requires a steady hand for small molds.



Step 3: Pouring must be done in one single rapid motion to avoid solidifying. Sample is discarded if an all-liquid pour fails. Although it was not necessary in this case, it can be helpful to clamp a heat gun pointed at the sample during pouring to ensure it is liquid as well as to warm the mold. Samples that cool or harden too quickly for this technique may be effectively made in stainless steel molds heated in an oven to about 120 ° C prior to pouring. The mold pictured is made of silicone as described in the experimental section.

Figure S2. Annotated photographs depicting the manner in which terpenoid-sulfur composites were fabricates for compressive testing. Image is for a sample of **GerS90**. Reproduced from C. P. Maladeniya, M. S. Karunarathna, M. K. Lauer, C. V. Lopez, T. Thiounn and R. C. Smith, *Mater. Adv.*, **2020**, *1*, 1665 under a Creative Commons Attribution-NonCommercial 3.0 Unported Licence.

(**a**)



(**b**)

Figure S3. The manner in which terpenoid-sulfur composites were fabricates for tensile testing was analogous to that used for compressive testing (Figure S3), but using dog bone-shaped moulds (A). Dimensions of these dog bone-shaped samples were consistent for all materials measured (B).