Electronic Supplementary Material (ESI) for RSC Advances.

Synthesis of Exfoliated Polystyrene/Anionic Clay MgAl-Layered double hydroxide: Structural and thermal properties

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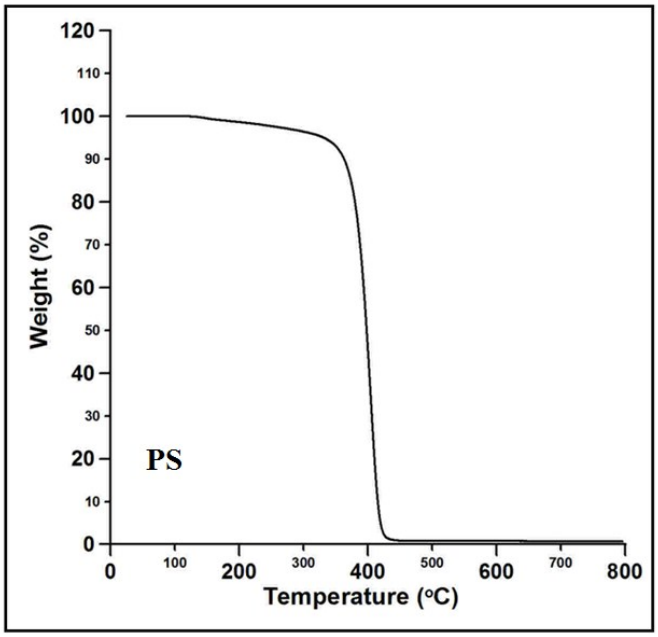
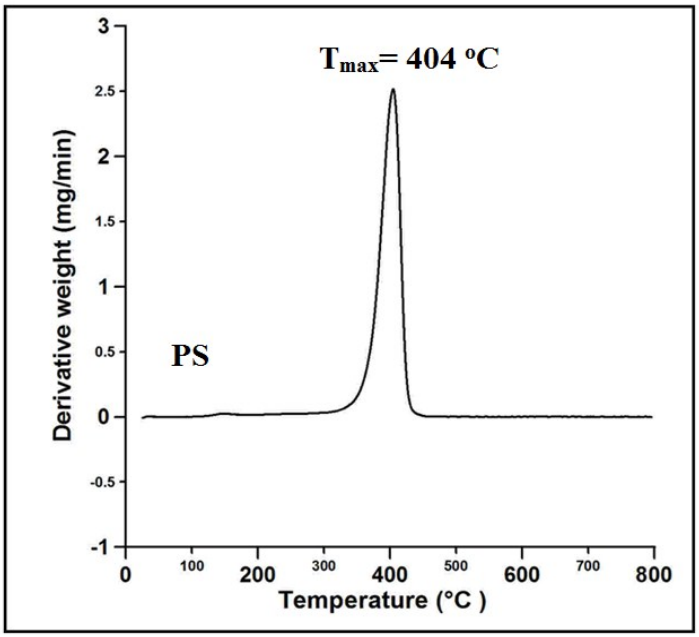
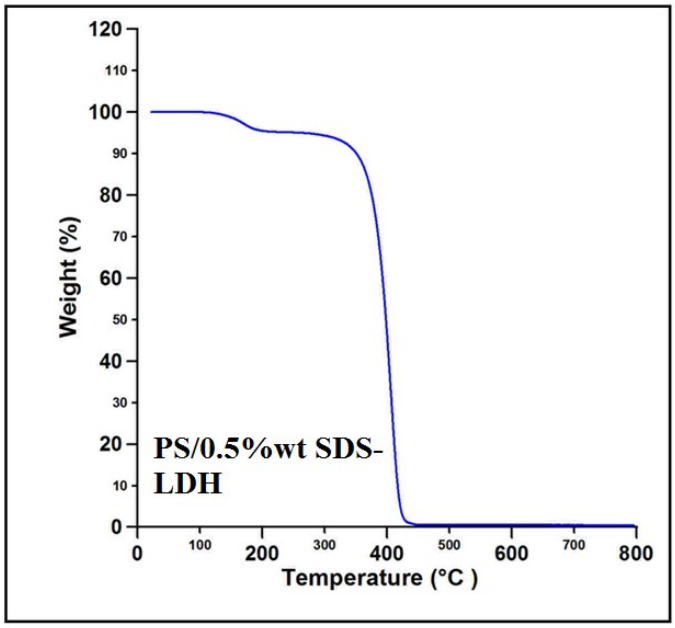
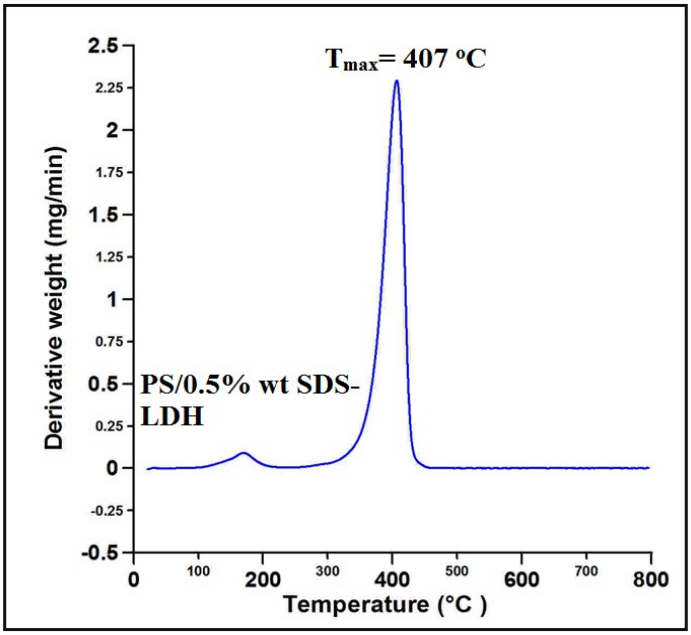
Thermal characterization of PS/Mg-Al LDH nanocomposites

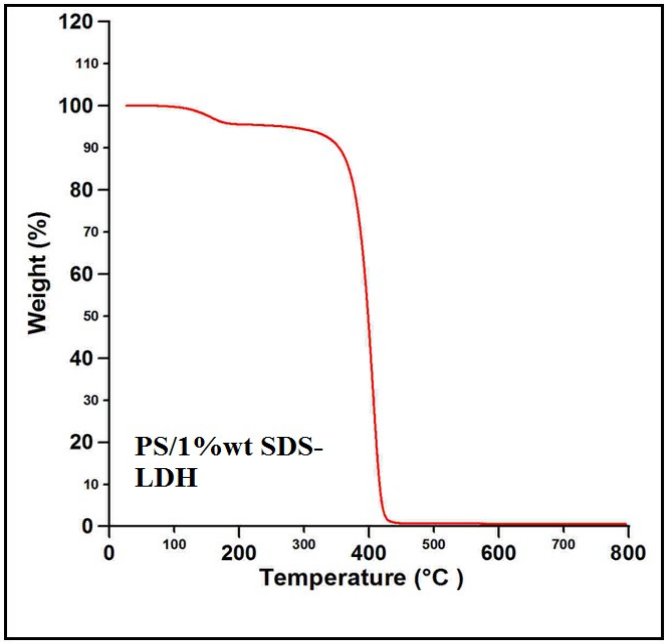
The thermal stability of nanocomposites and pure polystyrene (PS) was compared using TGA and DTG analysis. Fig. S1 depicts the TGA mass loss curves and corresponding derivative curves (DTG) of the PS/ modified LDH samples and the pure PS. From TGA curve, the thermal decomposition of the pure PS occurred in the range of 200-450 ^{o}C which was attributed the decomposition of the polymer backbone of PS. However, it is clear from the TGA curve of PS that there is a slight decomposition occurred before 200 ^{o}C. This decomposition may be due to the evaporation of the solvent.

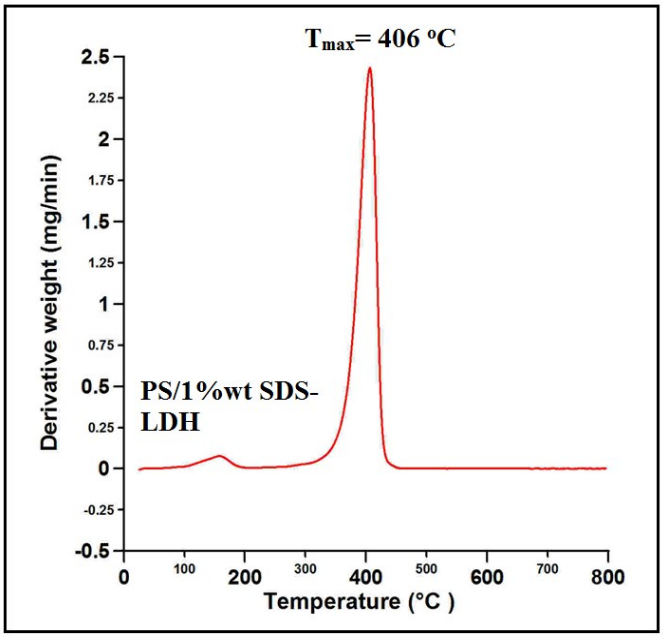

Weight (%)
Temperature (°C)
PS

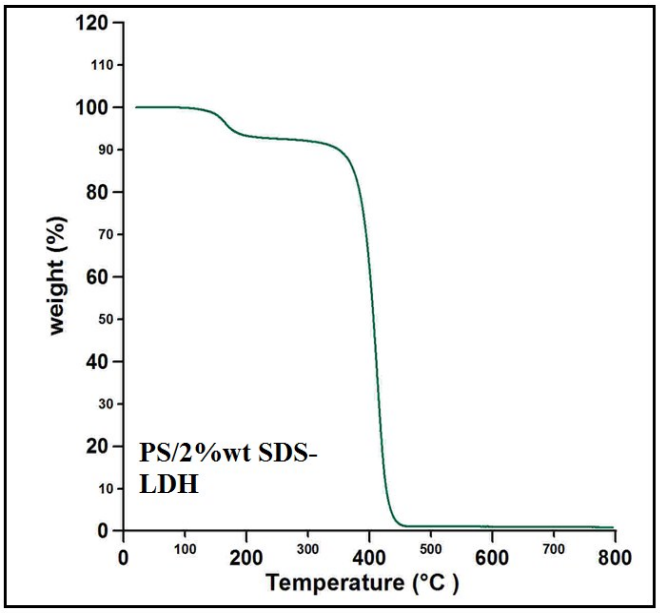

Derivative weight (mg/min)
Temperature (°C)
T_{max}= 404 °C
PS

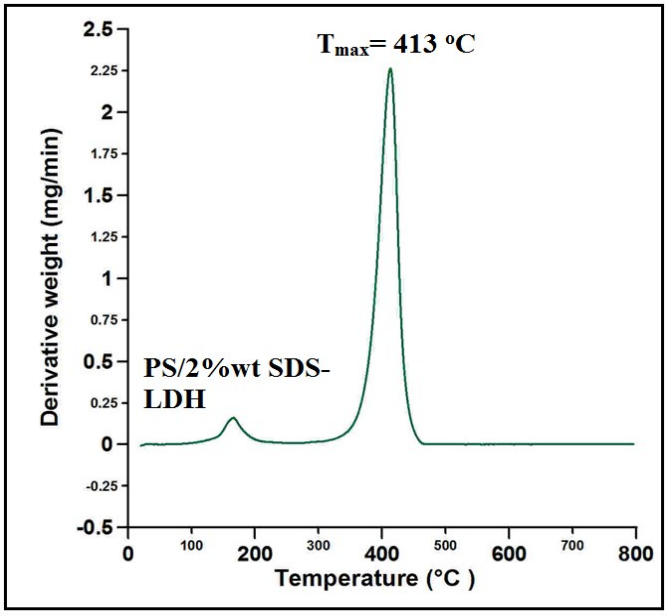

Weight (%)
Temperature (°C)
PS/0.5%wt SDS-LDH


Derivative weight (mg/min)
Temperature (°C)
T_{max}= 407 °C
PS/0.5% wt SDS-LDH


Weight (%)
Temperature (°C)
PS/1%wt SDS-LDH


T_{max}= 406 °C
Derivative weight (mg/min)
Temperature (°C)
PS/1%wt SDS-LDH


weight (%)
Temperature (°C)
PS/2%wt SDS-LDH


T_{max}= 413 °C
Derivative weight (mg/min)
Temperature (°C)
PS/2%wt SDS-LDH

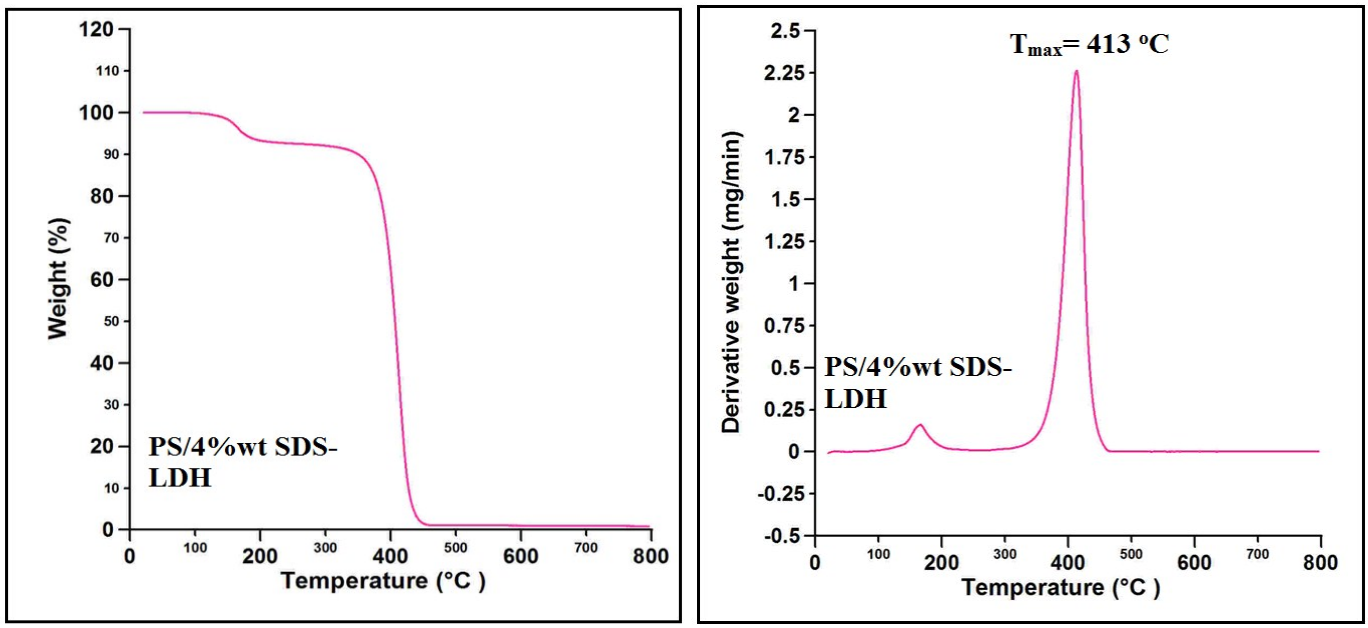


Fig. S1. TGA and DTG of pure PS and the different contents of SDS- MgAl LDH in the PS/SDS -MgAl LDH nanocomposite samples.