

Supporting Information for

In situ polymerization approach to
MoS₂/nylon-6 nanocomposites with enhanced
mechanical properties and thermal stability

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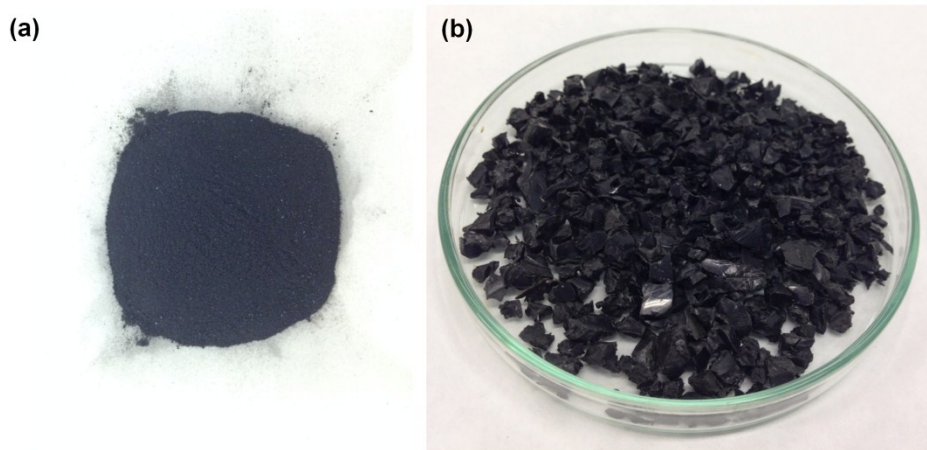


Fig. S1. Digital photos of f-MoS₂ powder (a) and the pieces of chopped f-MoS₂/PA6-0.5 nanocomposites (b).

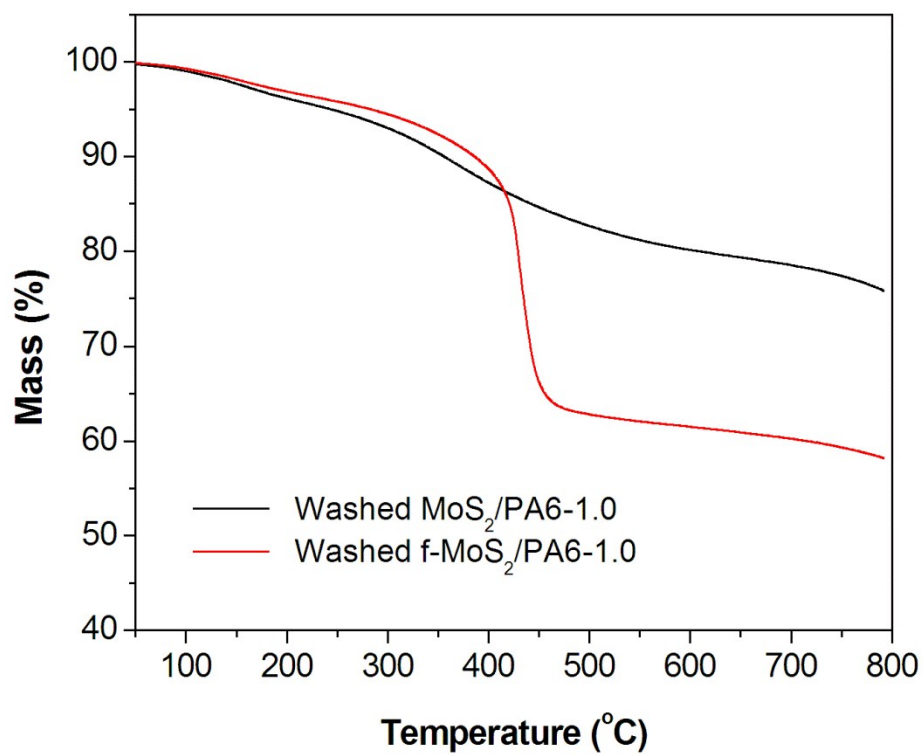


Fig. S2. TGA profiles of MoS₂/PA6-1.0 and f-MoS₂/PA6-1.0 nanocomposites washed by formic acid.

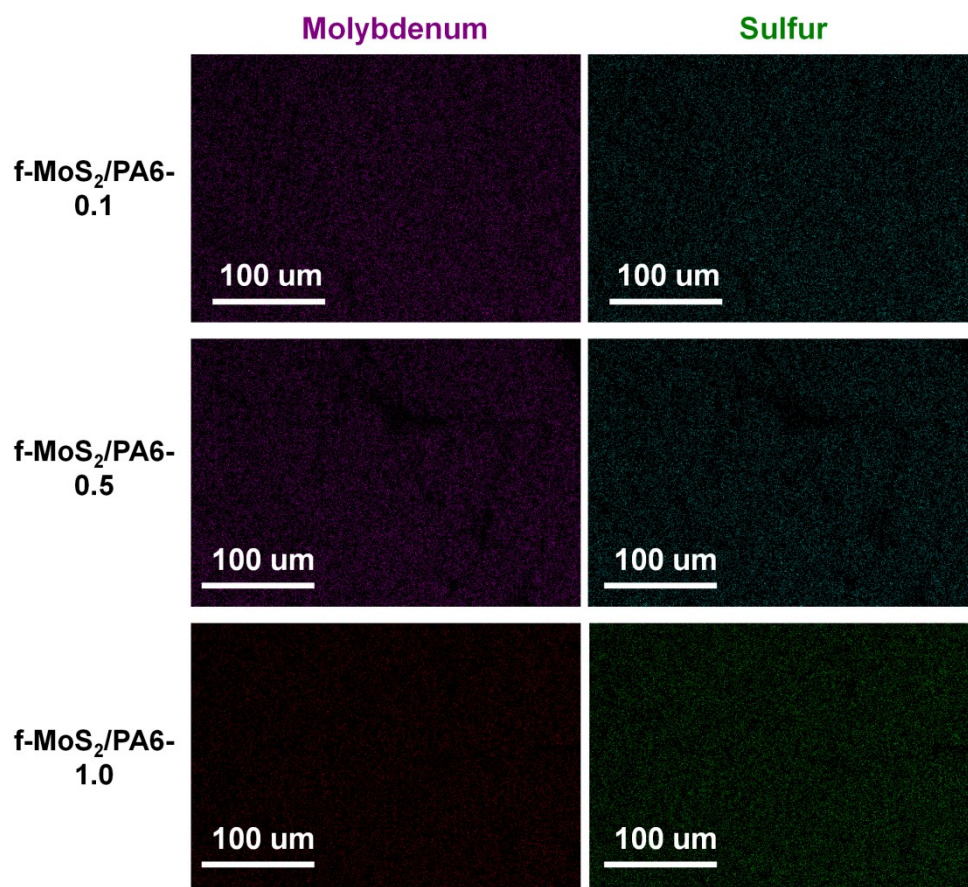


Fig. S3. Molybdenum and sulfur element distribution mapping images of f-MoS₂/PA6-0.1, f-MoS₂/PA6-0.5, and f-MoS₂/PA6-1.0.

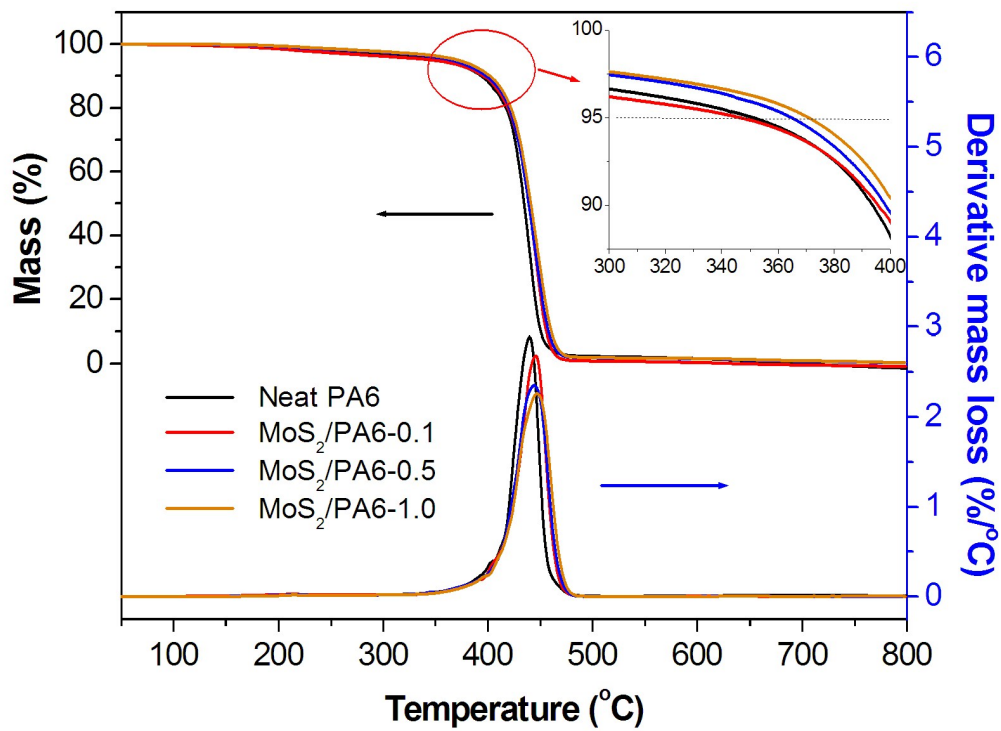


Fig. S4. Thermogravimetric curves of PA6 and MoS₂/PA6 composites.

Table S1 Molecular weight of PA6 and thermal properties of f-MoS₂/PA6 composites

Samples	[η] ^a	M _{η} ^b / g mol ⁻¹	T _{.5%} ^c / °C	T _{.50%} ^c / °C
PA6	0.71	18400	351	435
f-MoS ₂ /PA6-0.1	0.66	16832	356	445
f-MoS ₂ /PA6-0.5	0.59	14681	379	446
f-MoS ₂ /PA6-1.0	0.45	10550	387	458

^a Intrinsic viscosity of free PA6 of f-MoS₂/PA6 nanocomposites, which was measured at 25 °C in 85% formic acid solution by a Ubbelohde viscometer. ^b The viscosity-average molecular weight (M _{η}) was calculated according to Mark-Houwink equation, $\eta_{in} = K[M_{\eta}]^{\alpha}$, where $K = 2.26 \times 10^{-4}$ and $\alpha = 0.82$.¹ ^c The temperature at which 5% and 50% mass loss occurred in the corresponding TGA curves.