

Electronic Supplementary Material

Modified graphene as novel lubricating additive with high dispersion stability in oil

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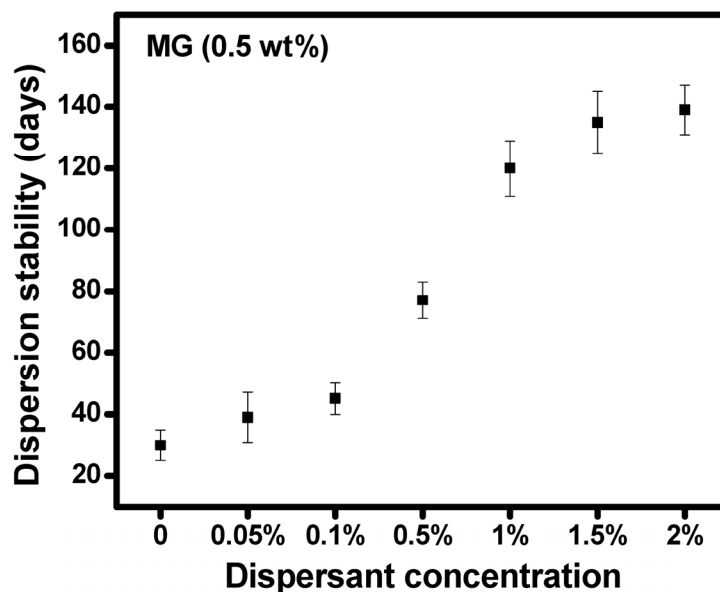


Fig. S1 Dispersion stability of MG (0.5 wt%) in PAO-6 as a function of dispersant concentration.

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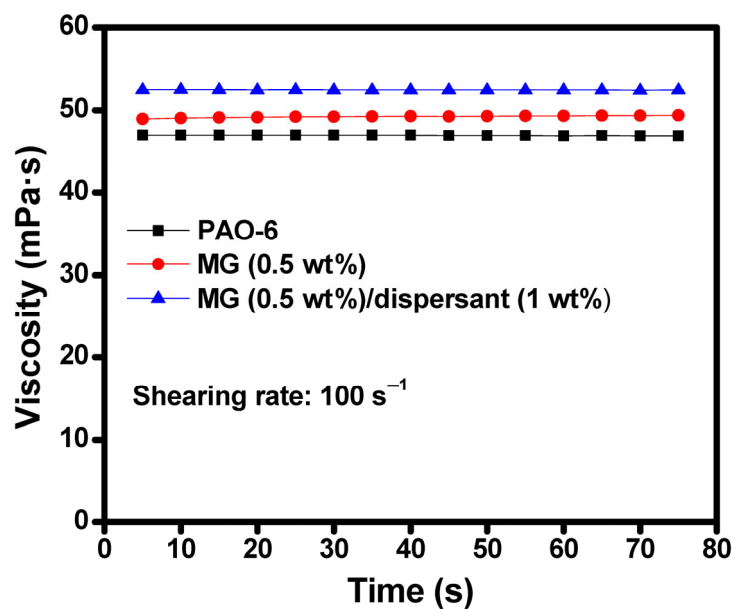


Fig. S2 Viscosities of PAO-6, PAO-6 with MG (0.5 wt%), and PAO-6 with MG (0.5 wt%)/dispersant (1 wt%) when the shearing rate was 100 s^{-1} .

Table S1 Comparison of stable dispersion time of graphene as lubricating additives in base oil.

Base oil	Graphene concentration	Stable dispersion time (day)	References
PAO-4	0.05 wt%	3	[20]
4010AL	0.3 wt%	5	[21]
Group II 500 N petroleum-based oil	0.01 wt%	30	[22]
PAO-4	0.1 wt%	0.8	[28]
PAO-2	0.5 wt%	14	[31]
Sunflower seed oil	0.3 wt%	12	[32]
10W-40 commercial engine oil	0.04 mg/mL	30	[33]
10W-40 commercial engine oil	0.04 mg/mL	30	[34]
PAO-6	0.5 wt%	2.1	[35]
VHVI8 base oil	0.2 mg/mL	24	[36]
PAO-6	0.5 wt%	120	This Work