

Supplemental Materials

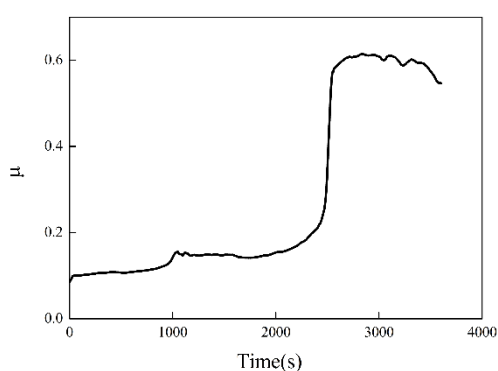
Surface-modified Garnet Particles for Reinforcing Epoxy Composites

Yiming Jiang ^{1,2}, Fengping Xu ^{1,3}, Kun Liu ^{1,2,*} and Qiming Feng ¹

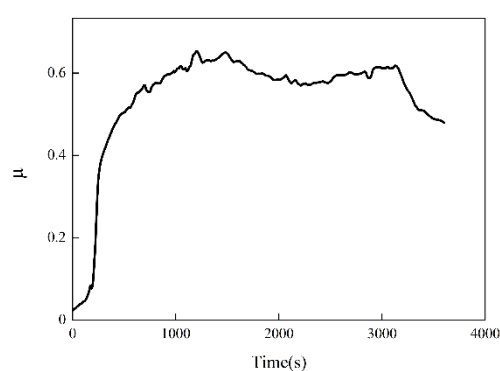
¹ School of Minerals Processing and Bioengineering, Central South University, Changsha 410083, China; ymjiang@csu.edu.cn (Y.J.); xufengping@minmetals.com (F.X.); qmfeng@csu.edu.cn (Q.F.)

² Key Lab for Mineral Materials and Application of Hunan Province, Central South University, Changsha 410083, China

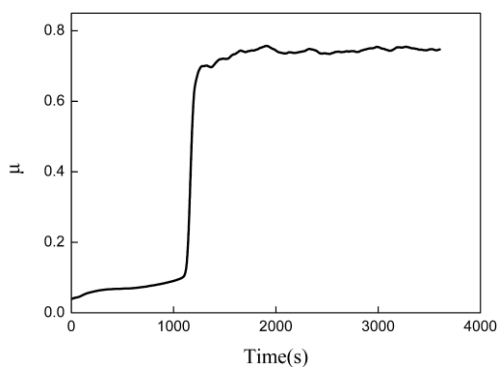
³ Hunan Nonferrous Xintianling Tungsten Industry Co. Ltd., Chenzhou 423000, China



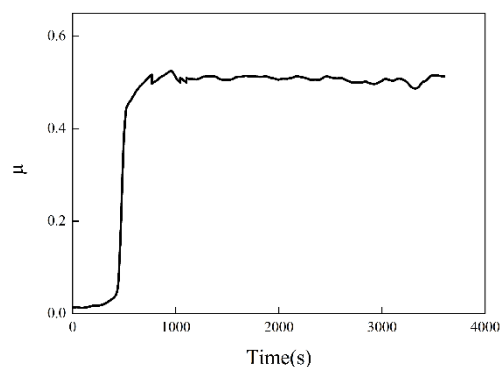
(1) EP/MG composite containing 10 wt % MG with particle size 21.125 μm .



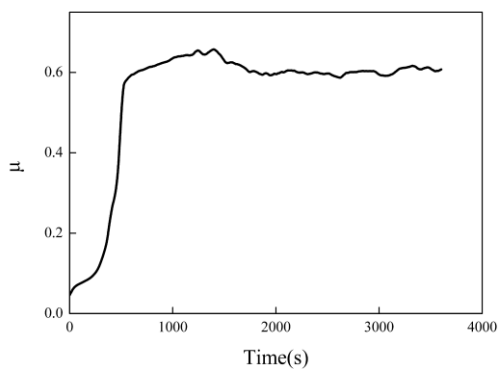
(2) EP/MG composite containing 20 wt % MG with particle size 21.125 μm .



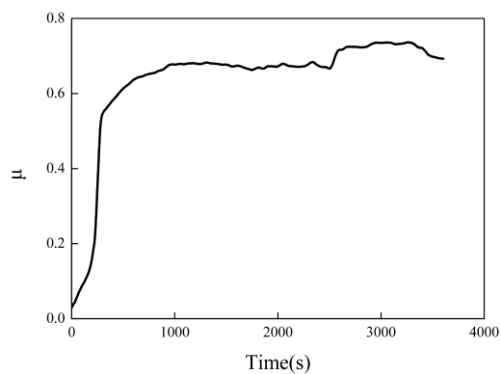
(3) EP/MG composite containing 30 wt % MG with particle size 21.125 μm .



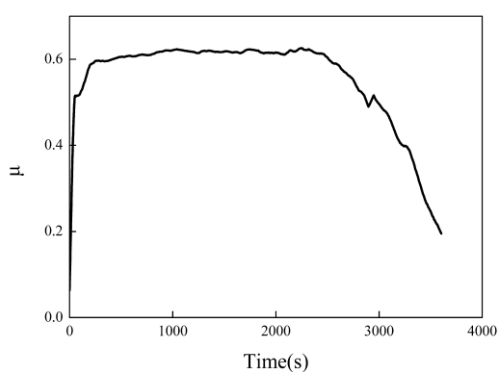
(4) EP/MG composite containing 10 wt % MG with particle size 11.300 μm .



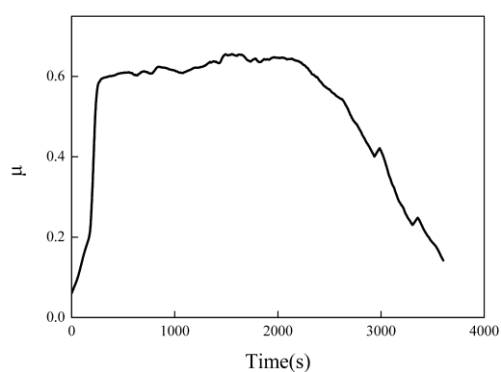
(5) EP/MG composite containing 20 wt % MG with particle size 11.300 μm .



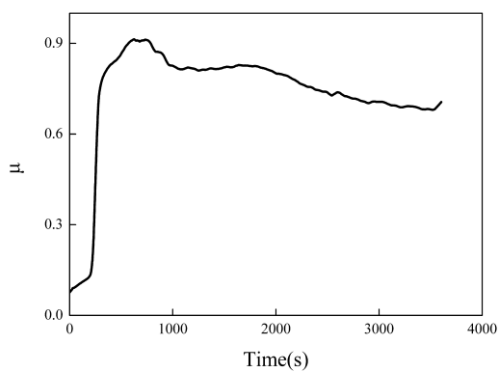
(6) EP/MG composite containing 30wt % MG with particle size of 11.300 μm .



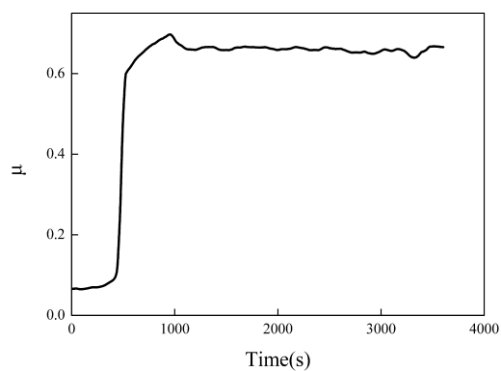
(7) EP/MG composite containing 10 wt % MG with particle size 8.697 μm .



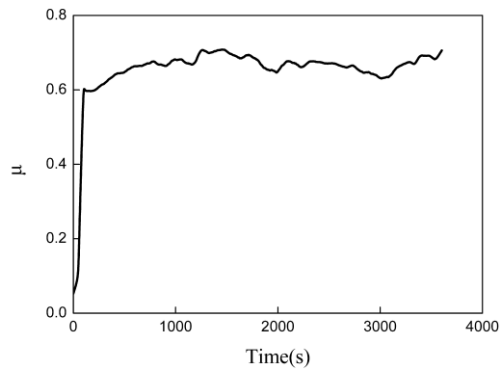
(8) EP/MG composite containing 20 wt % MG with particle size 8.697 μm .



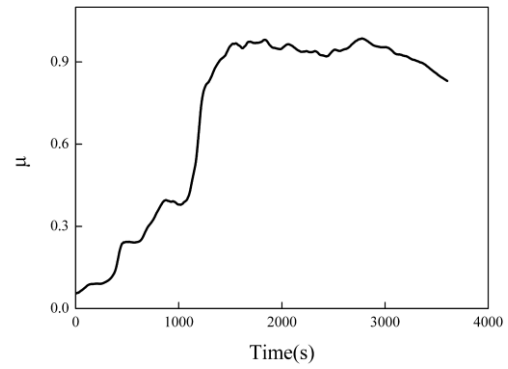
(9) EP/MG composite containing 30 wt % MG with particle size 8.697 μm .



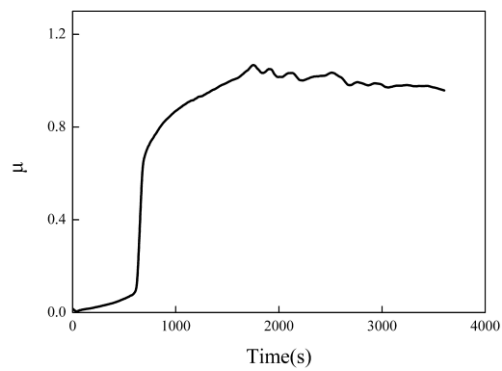
(10) EP/MG composite containing 10 wt % MG with particle size 4.960 μm .



(11) EP/MG composite containing 20 wt % MG with particle size 4.960 μm .

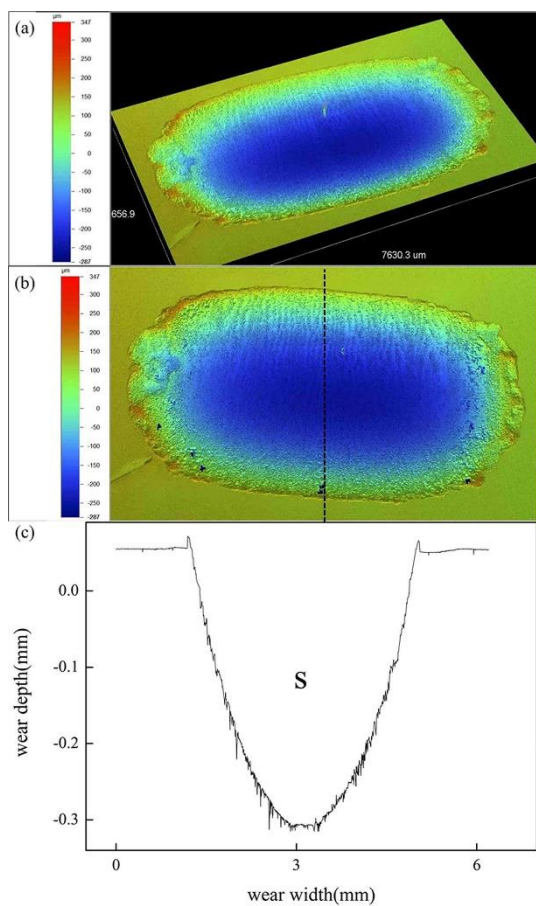


(12) EP/MG composite containing 30 wt % MG with particle size 4.960 μm .

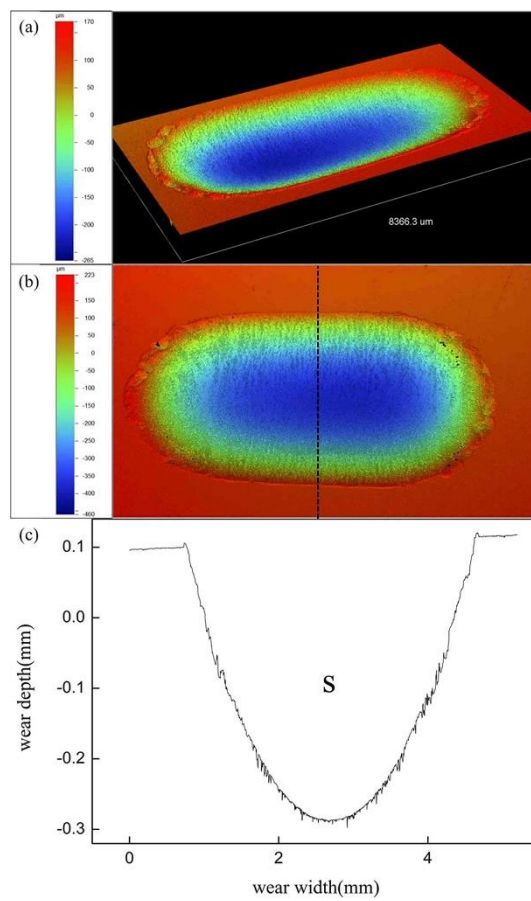


(13) Neat epoxy.

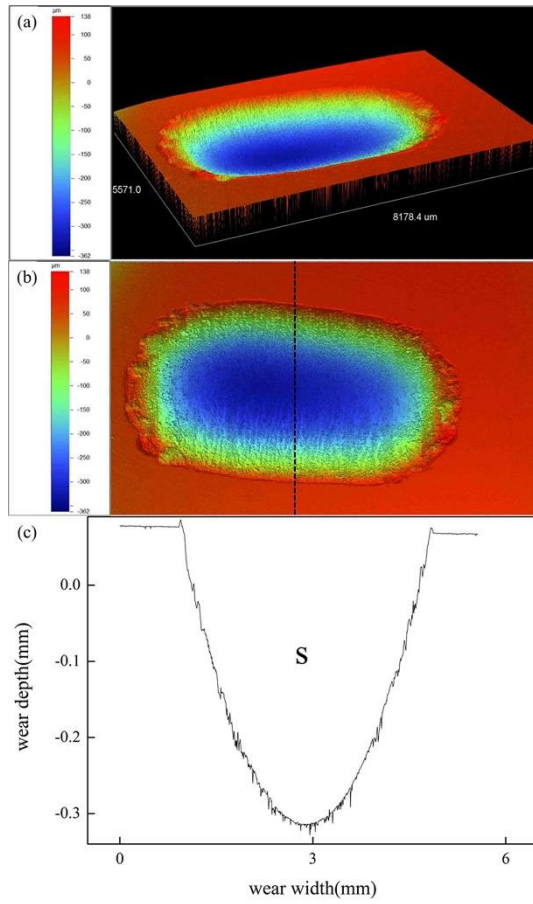
Figure S1. Variations of coefficient of friction with sliding time for epoxy (EP)/modified garnet (MG) composites and neat epoxy.



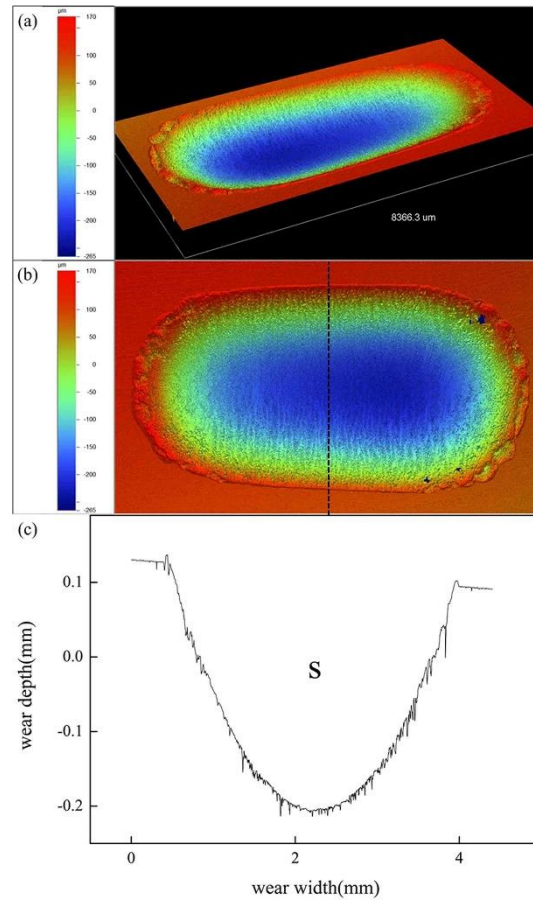
(1) EP/MG composite containing 10 wt % MG with particle size 21.125 μm.



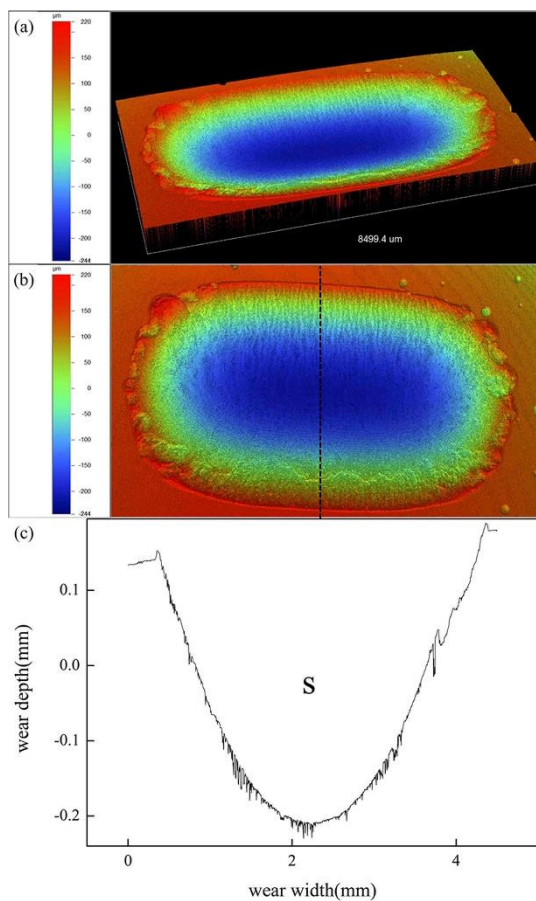
(2) EP/MG composite containing 20 wt % MG with particle size 21.125 μm.



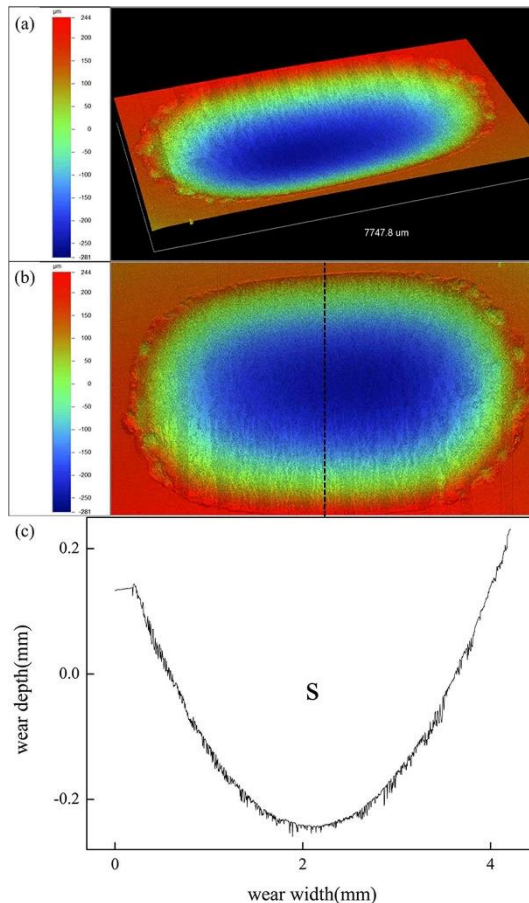
(3) EP/MG composite containing 30 wt % MG with particle size 21.125 μm .



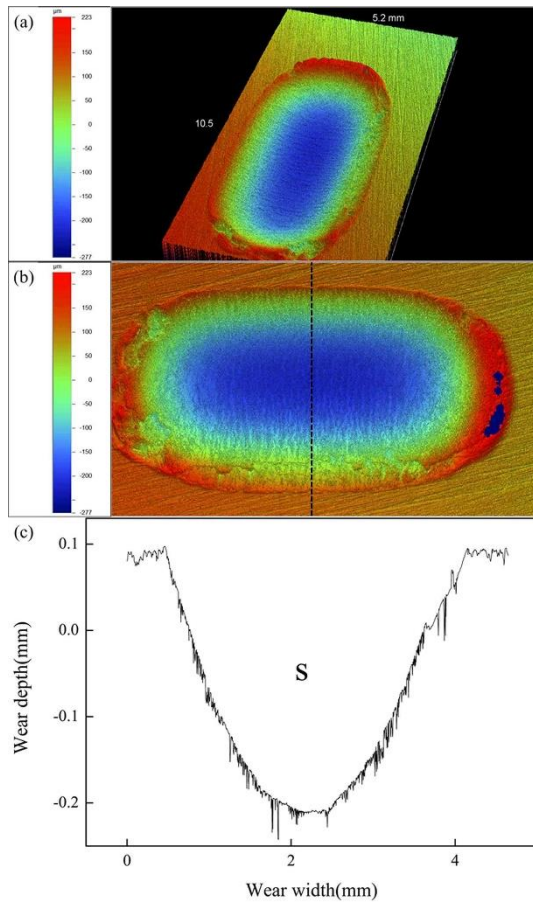
(4) EP/MG composite containing 10 wt % MG with particle size 11.300 μm .



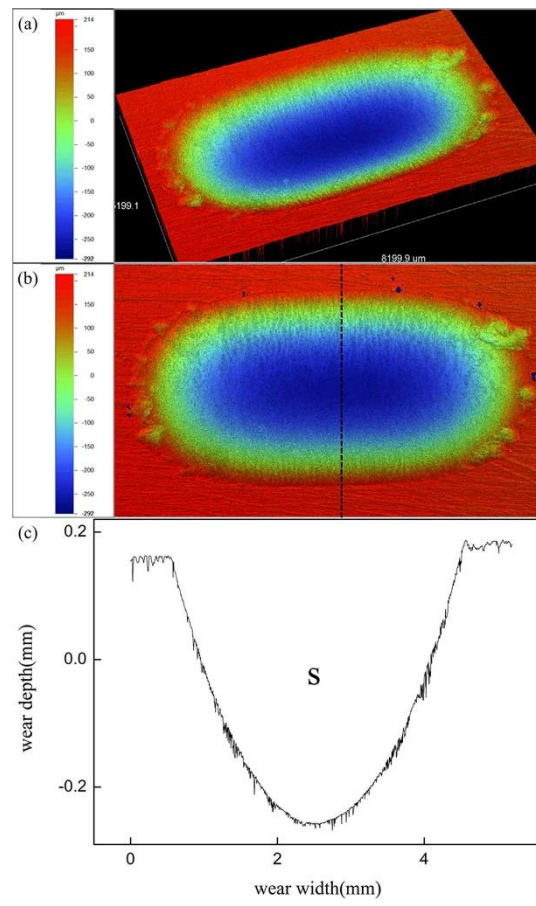
(5) EP/MG composite containing 20 wt % MG with particle size 11.300 μm .



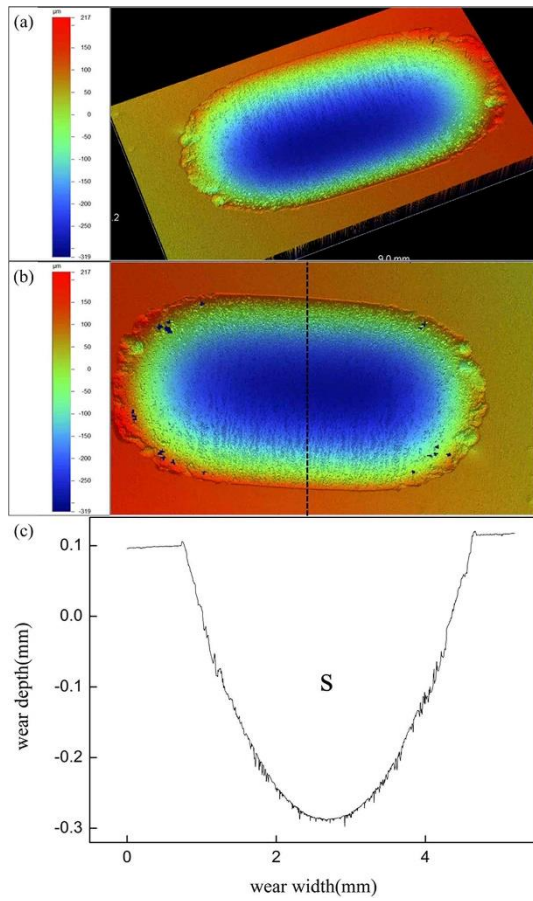
(6) EP/MG composite containing 30 wt % MG with particle size 11.300 μm .



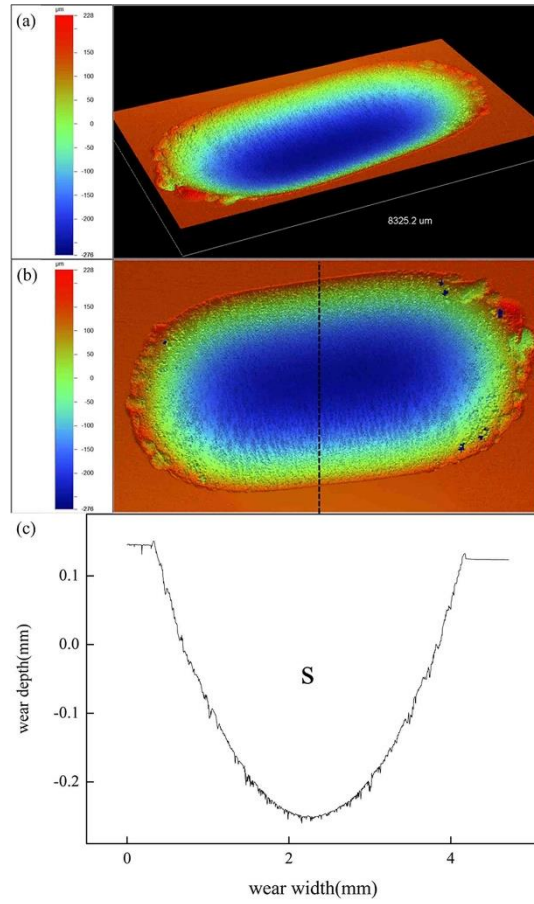
(7) EP/MG composite containing 10 wt % MG with particle size 8.697 μm.



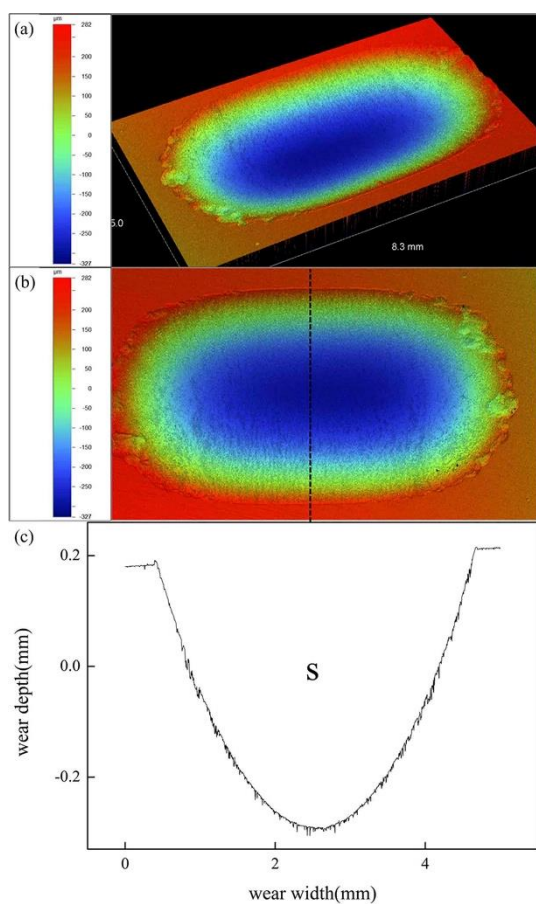
(8) EP/MG composite containing 20 wt % MG with particle size 8.697 μm.



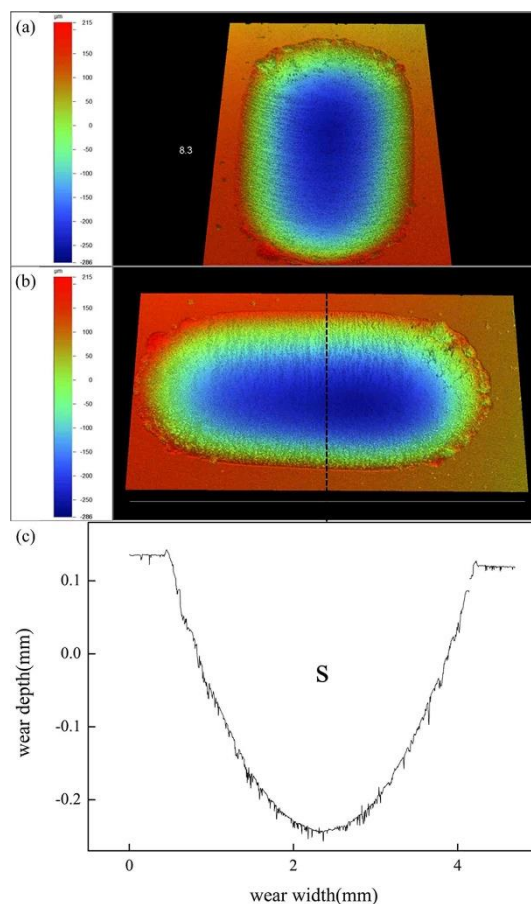
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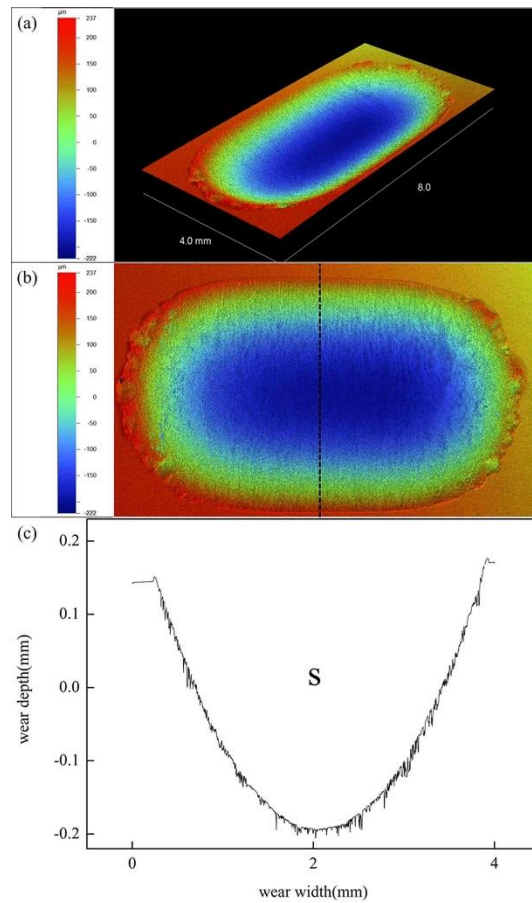
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(11) EP/MG composite containing 20 wt % MG with particle size 4.960 μm .



(12) EP/MG composite containing 30 wt % MG with particle size 4.960 μm .



(13) Neat epoxy.

Figure S2. Optical profiles of wear tracks on EP/MG composites and neat epoxy resin: (a) 3D profile; (b) planform; (c) line scan of cross-profile.



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