Supporting Information

Switching Brake Materials to Extremely Wear-Resistant Self-Lubrication Materials via Tuning Interface Nanostructures

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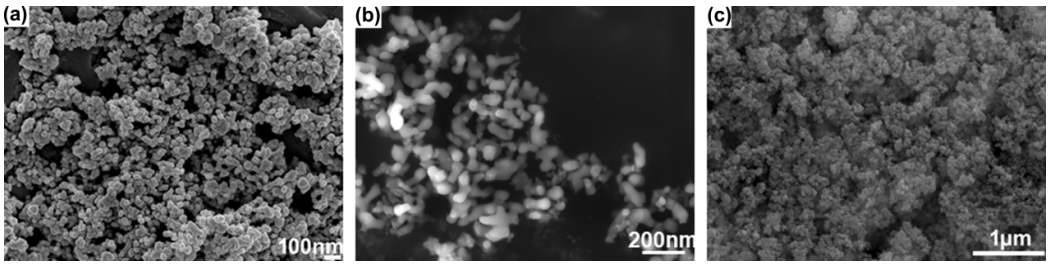

Figure S1. SEM morphologies of (a) ZrO_2, (b) Al_2O_3 and (c) SiO_2 nanoparticles.

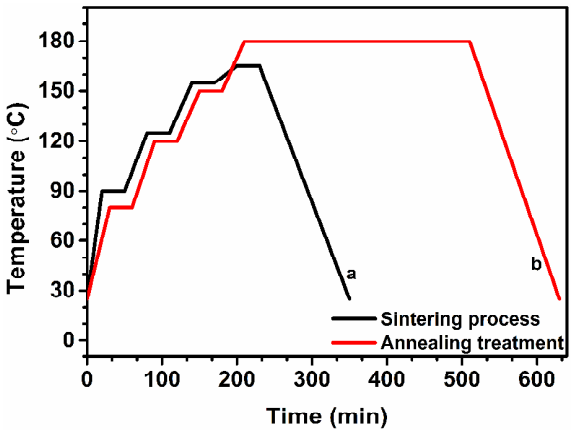

Figure S2. Sintering and annealing parameters (temperature, pressure and time) for preparing the composites.

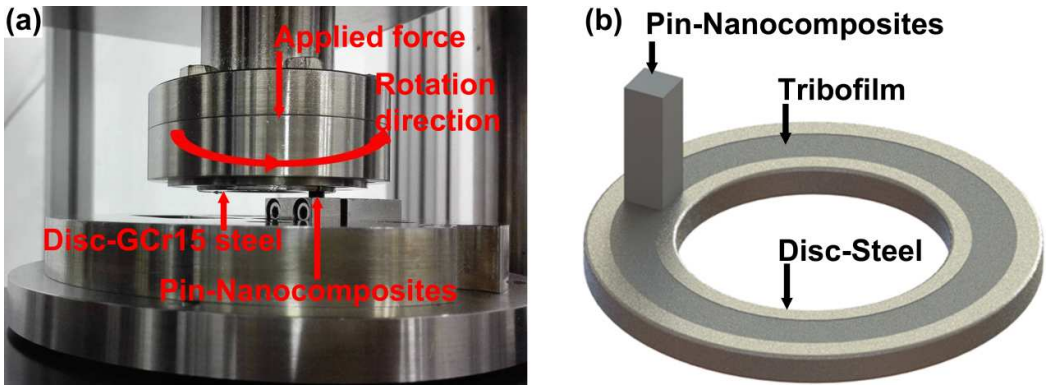

Figure S3. Photography of tribometer (a) and schema of contact configuration of sliding pair (b).

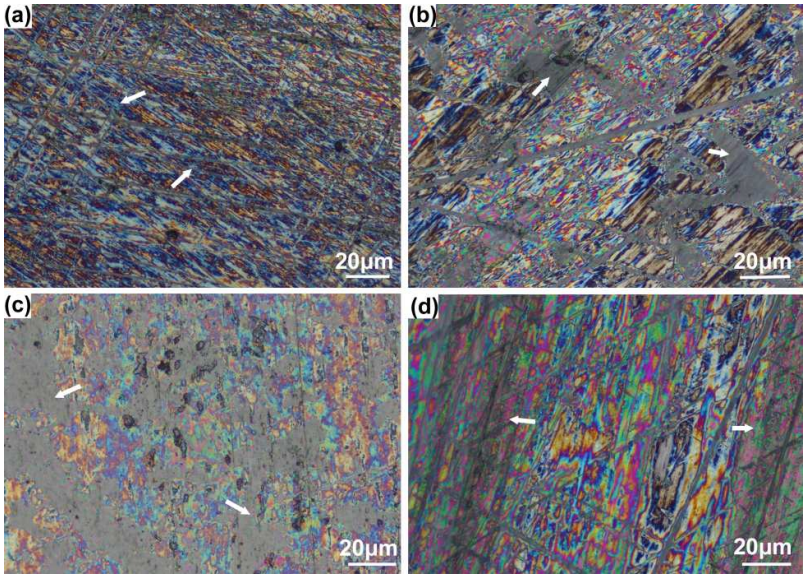

Figure S4. Optical micrographs of triboflims formed on steel counterface after sliding against BraM-C (a), BraM-3Zr (b), BraM-3Al (c), and BraM-3Si (d) at 30 MPa. Arrows indicate areas covered by tribofilms.

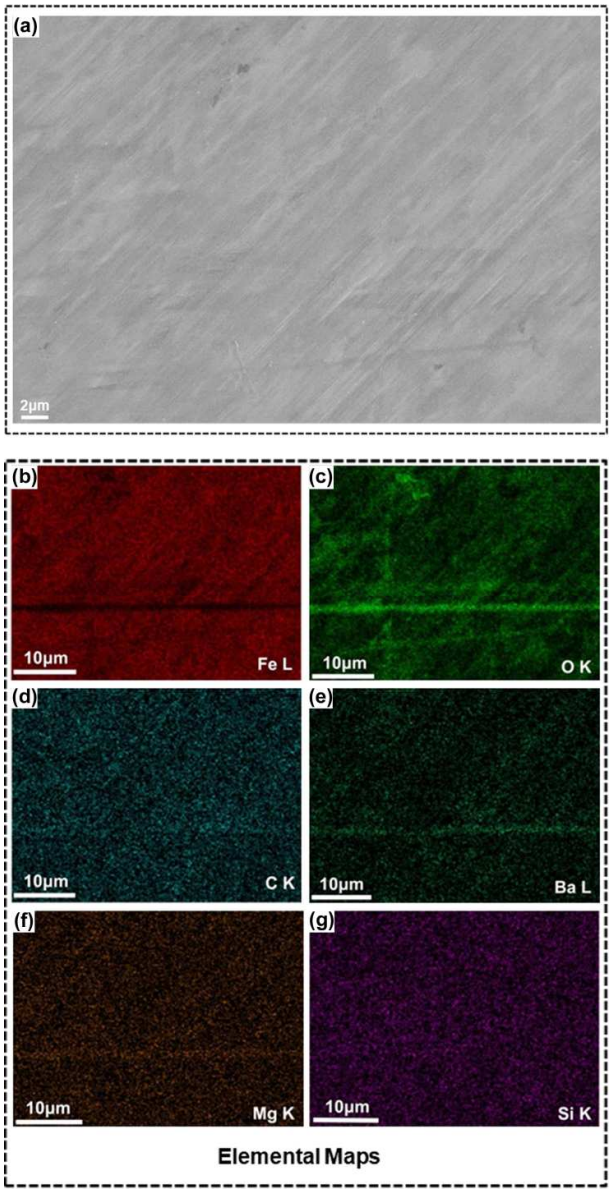

Figure S5. SEM micrographs (a) and EDS maps of Fe (b), O (c), C (d), Ba (e), Mg (f) and Si (g) elements of the steel surface rubbed with BraM-C at 30 MPa.