SUPPORTING INFORMATION

Layer-Dependent Friction on the Surface of Multilayer Alternately Stacked Graphene and h-BN

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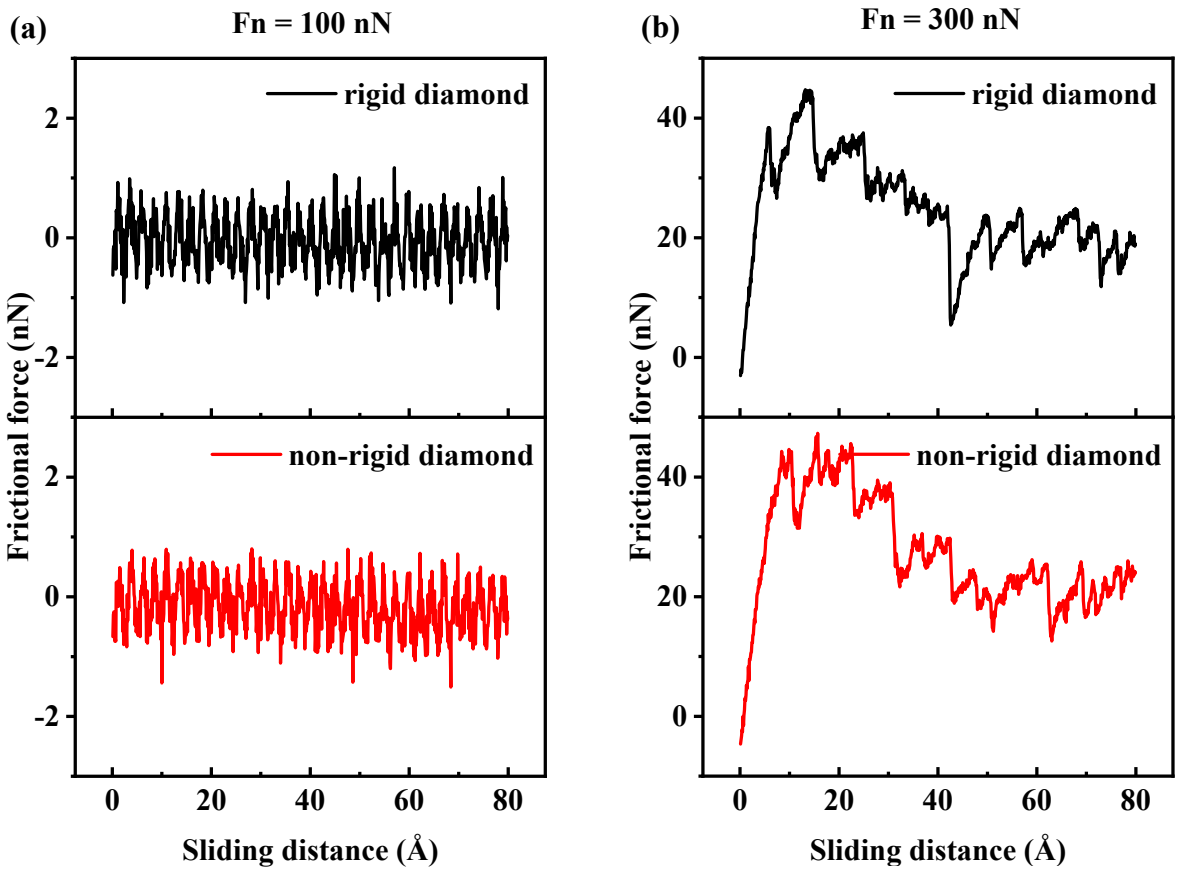

Figure S1. The comparison of the friction force on the surfaces of bilayer alternately stacked graphene and hexagonal boron nitride with graphene as the surface (2GBN_G) under sliding contact with rigid and non-rigid diamond tip at normal loads of (a) 100 nN and (b) 300 nN .

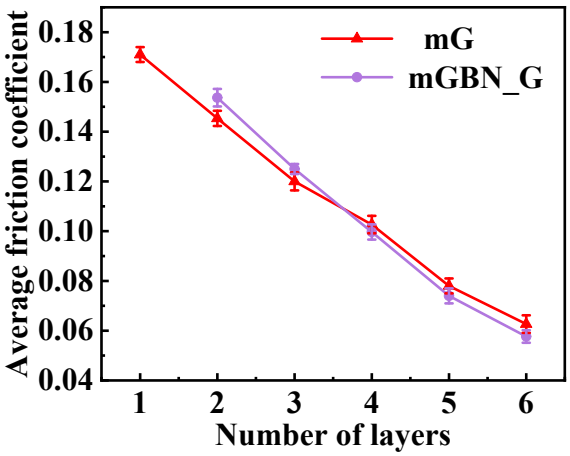

Figure S2. The variation of the average friction coefficients on mG amd mGBN_G with the layer numbers from 1 to 6. Error bars (representing standard deviation, n = 3) indicate the statistical significance.

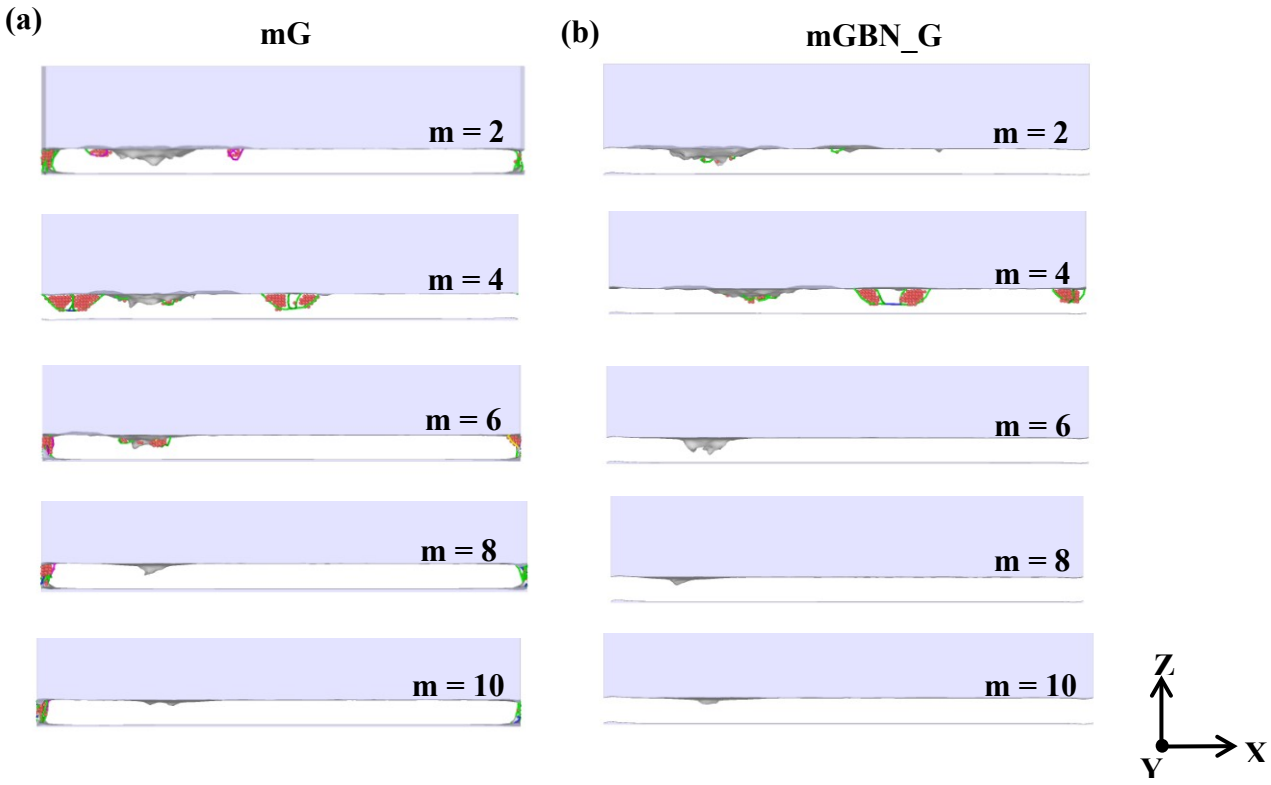

Figure S3. The dislocation snapshots for (a) multilayer graphene (mG, m = 2, 4, 6, 8, 10) and (b) multilayer alternately stacked graphene and hexagonal boron nitride with graphene as the surface (mGBN_G, m = 2, 4, 6, 8, 10) under 300 nN load.

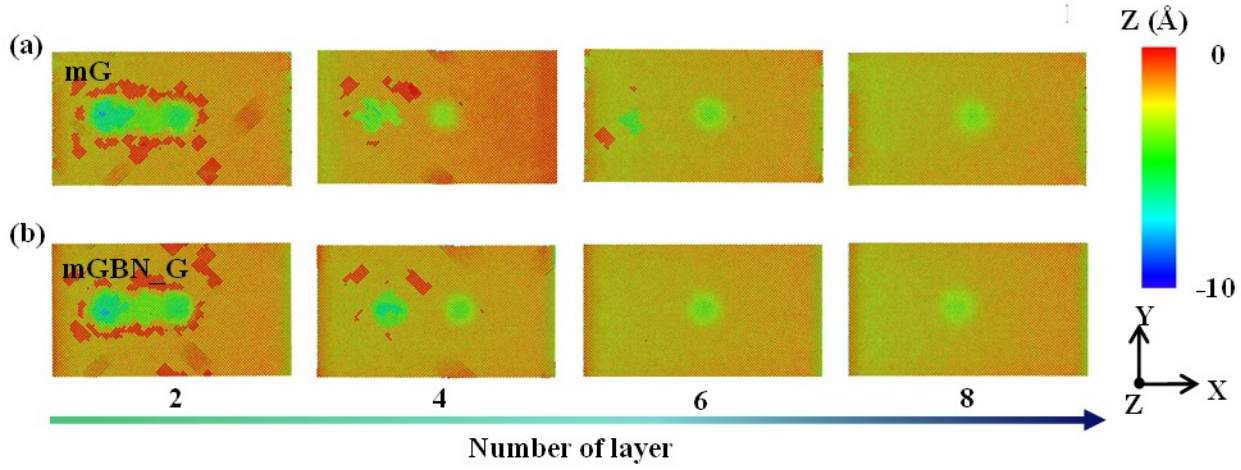

Figure S4. Surface wear conditions of copper substrate coated with (a) multilayer graphene (mG, m = 2, 4, 6, 8) and (b) multilayer alternately stacked graphene and hexagonal boron nitride with

graphene as the surface (mGBN_G, m = 2, 4, 6, 8) after friction by a diamond tip under a 300 nN normal load. Atoms are colored based on the value of the Z - coordinate.

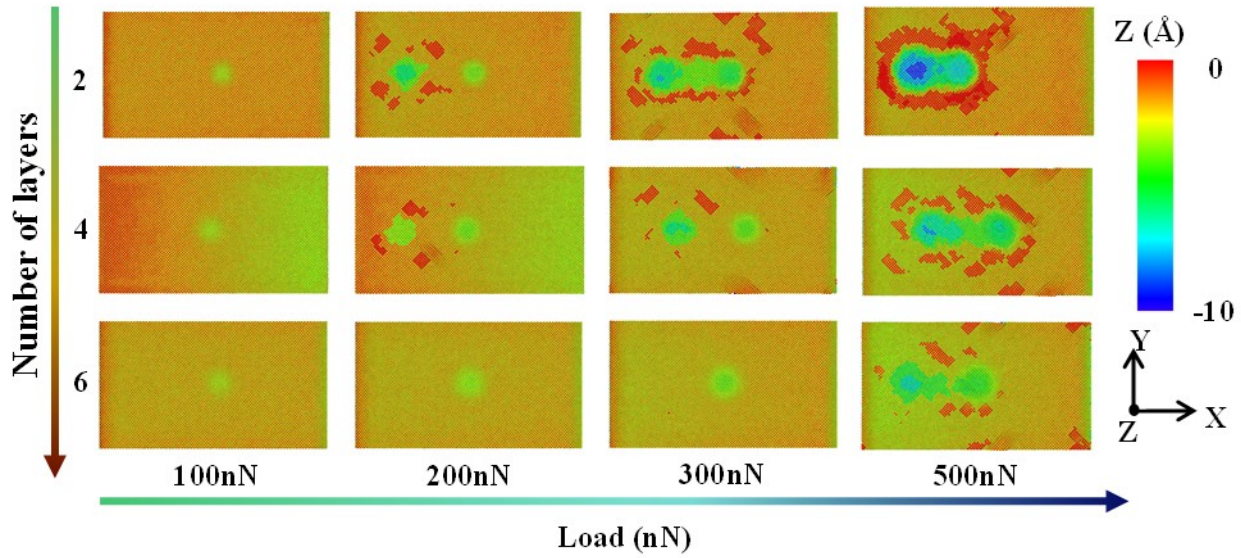

Figure S5. Surface wear conditions of copper substrate coated with multilayer alternately stacked graphene and hexagonal boron nitride with graphene as the surface (mGBN_G, m = 2, 4, 6) after friction by a diamond tip under 100 nN, 200 nN, 300 nN and 500 nN normal loads. Atoms are colored based on the value of the Z - coordinate.