Electronic Supplementary Material (ESI) for Nanoscale.

Supporting Information

Origin of moiré superlattice scale lateral force modulation of graphene on transition metal substrate

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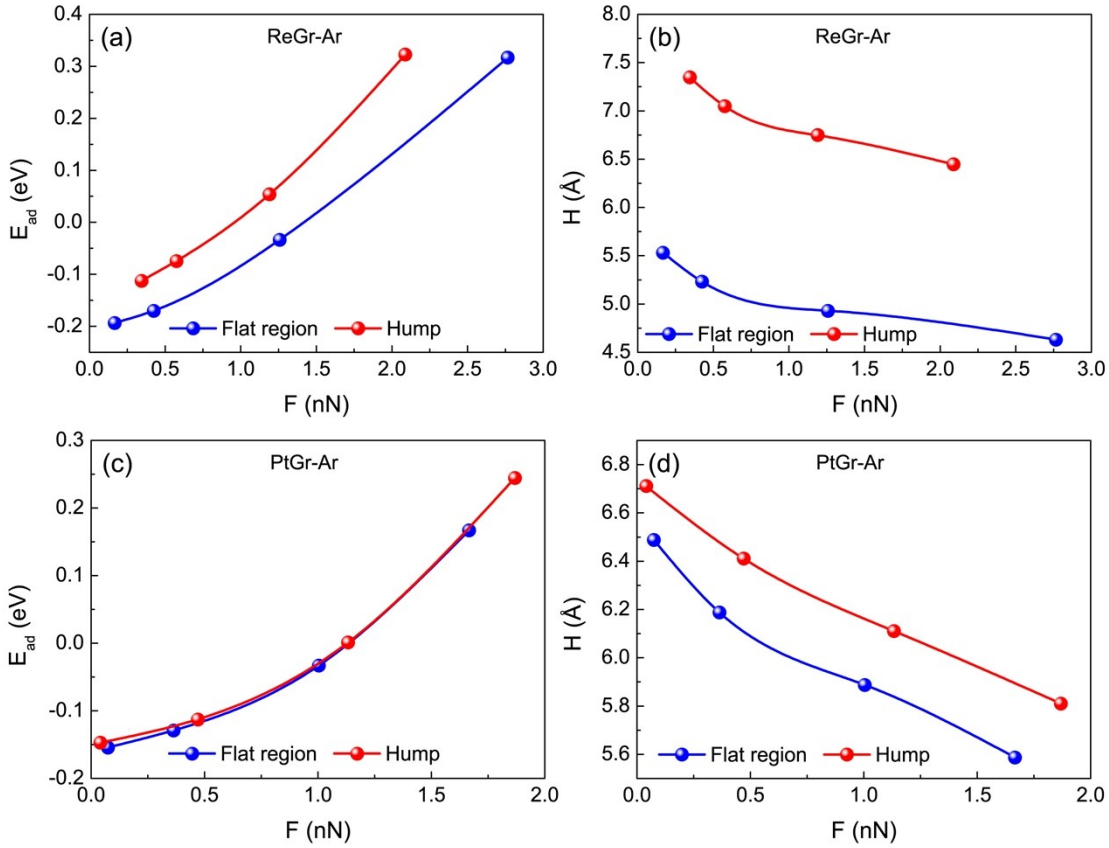

Fig. S1 The DFT calculation results of the indentations of a one-Ar-atom tip at the flat region and the hump of graphene/Re(0001) and graphene/Pt(111), respectively. (a) The relationships between normal load F and adsorption energy E_{ad} for indentations on graphene/Re(0001). (b) The relationships between normal load F and height H for indentations on graphene/Re(0001). (c) The relationships between normal load F and adsorption energy E_{ad} for indentations on graphene/Pt(111). (d) The relationships between normal load F and height H for indentations on

graphene/Pt(111).

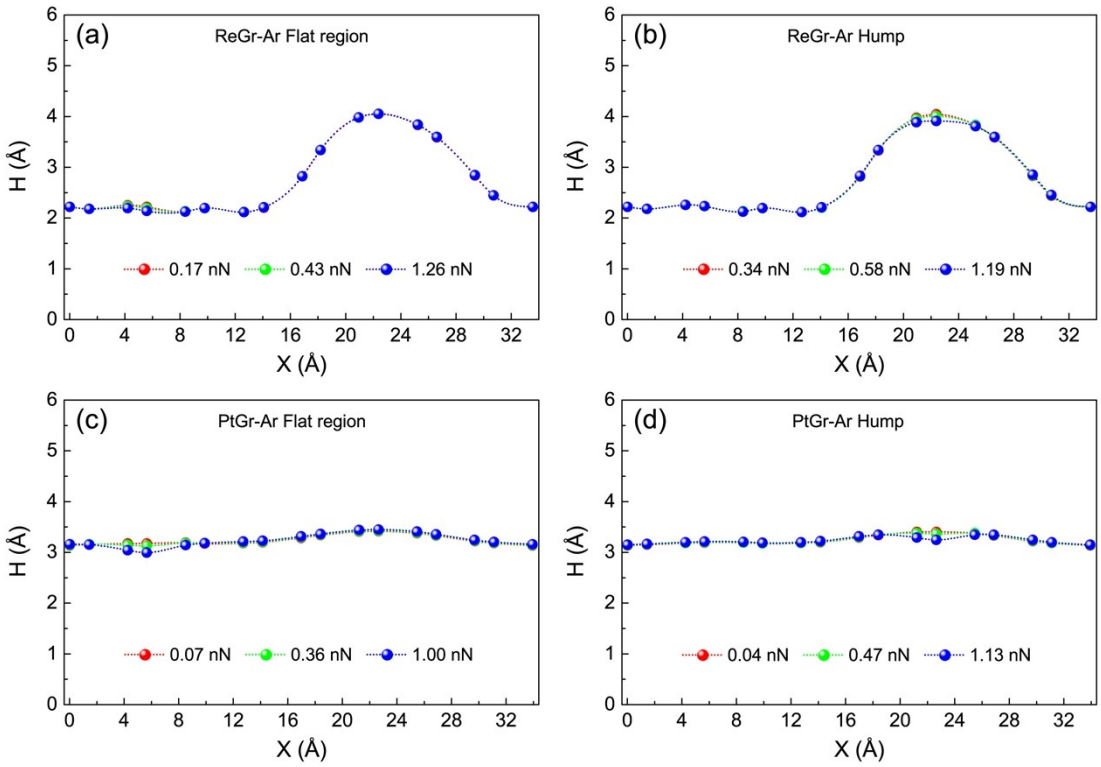

Fig. S2 The height profiles of graphene under the indentations of a one-Ar-atom tip at the flat region and the hump of graphene/Re(0001) and graphene/Pt(111), respectively. (a) Indentation at the flat region of graphene/Re(0001). (b) Indentation at the hump of graphene/Re(0001). (c) Indentation at the flat region of graphene/Pt(111). (d) Indentation at the hump of graphene/Pt(111).

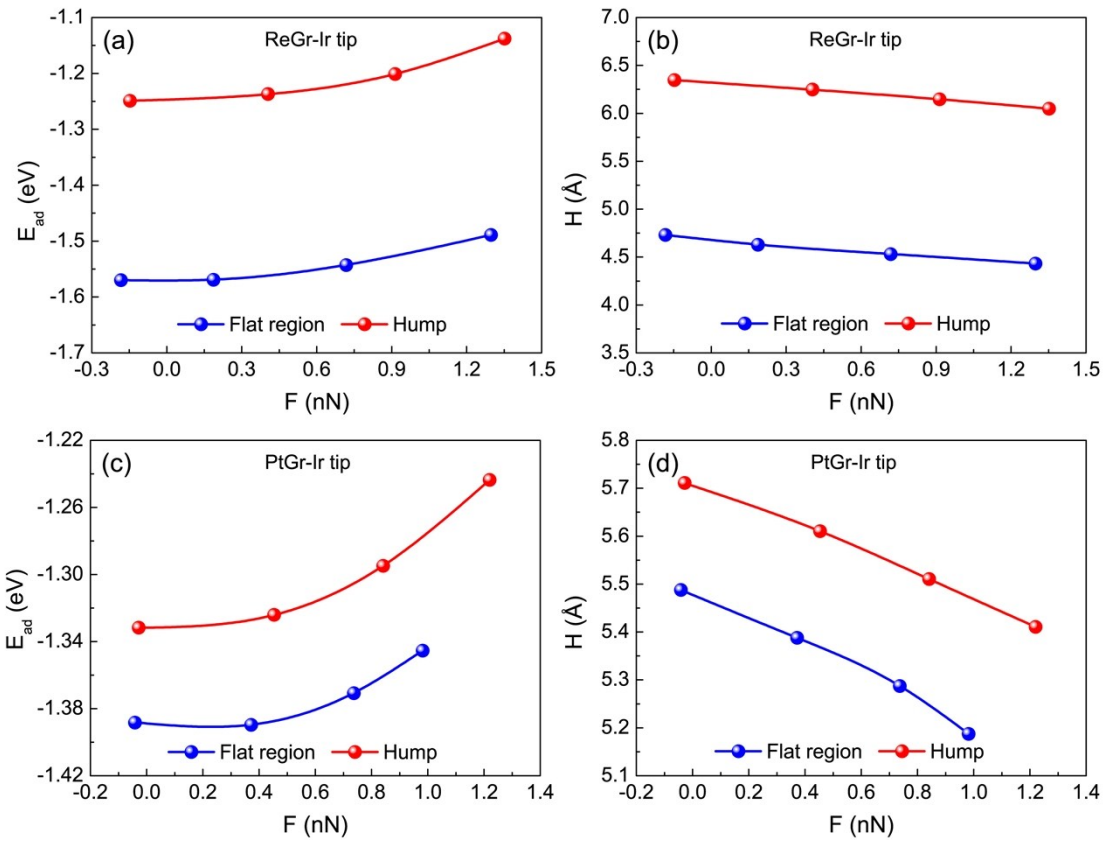

Fig. S3 The DFT calculation results of the indentations of a 10-atoms Ir tip at the flat region and the hump of graphene/Re(0001) and graphene/Pt(111), respectively. (a) The relationships between normal load F and adsorption energy E_{ad} for indentations on graphene/Re(0001). (b) The relationships between normal load F and height H for indentations on graphene/Re(0001). (c) The relationships between normal load F and adsorption energy E_{ad} for indentations on graphene/Pt(111). (d) The relationships between normal load F and height H for indentations on graphene/Pt(111).

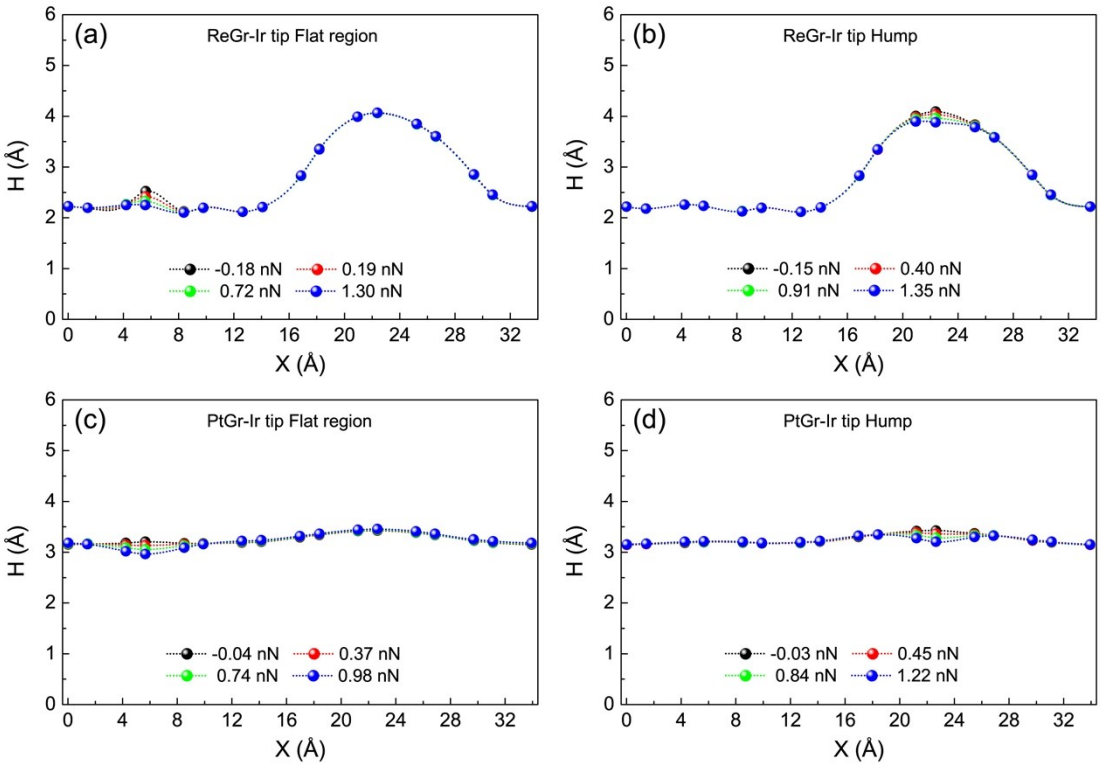

Fig. S4 The height profiles of graphene under the indentations of a 10-atoms Ir tip at the flat region and the hump of graphene/Re(0001) and graphene/Pt(111), respectively. (a) Indentation at the flat region of graphene/Re(0001). (b) Indentation at the hump of graphene/Re(0001). (c) Indentation at the flat region of graphene/Pt(111). (d) Indentation at the hump of graphene/Pt(111).