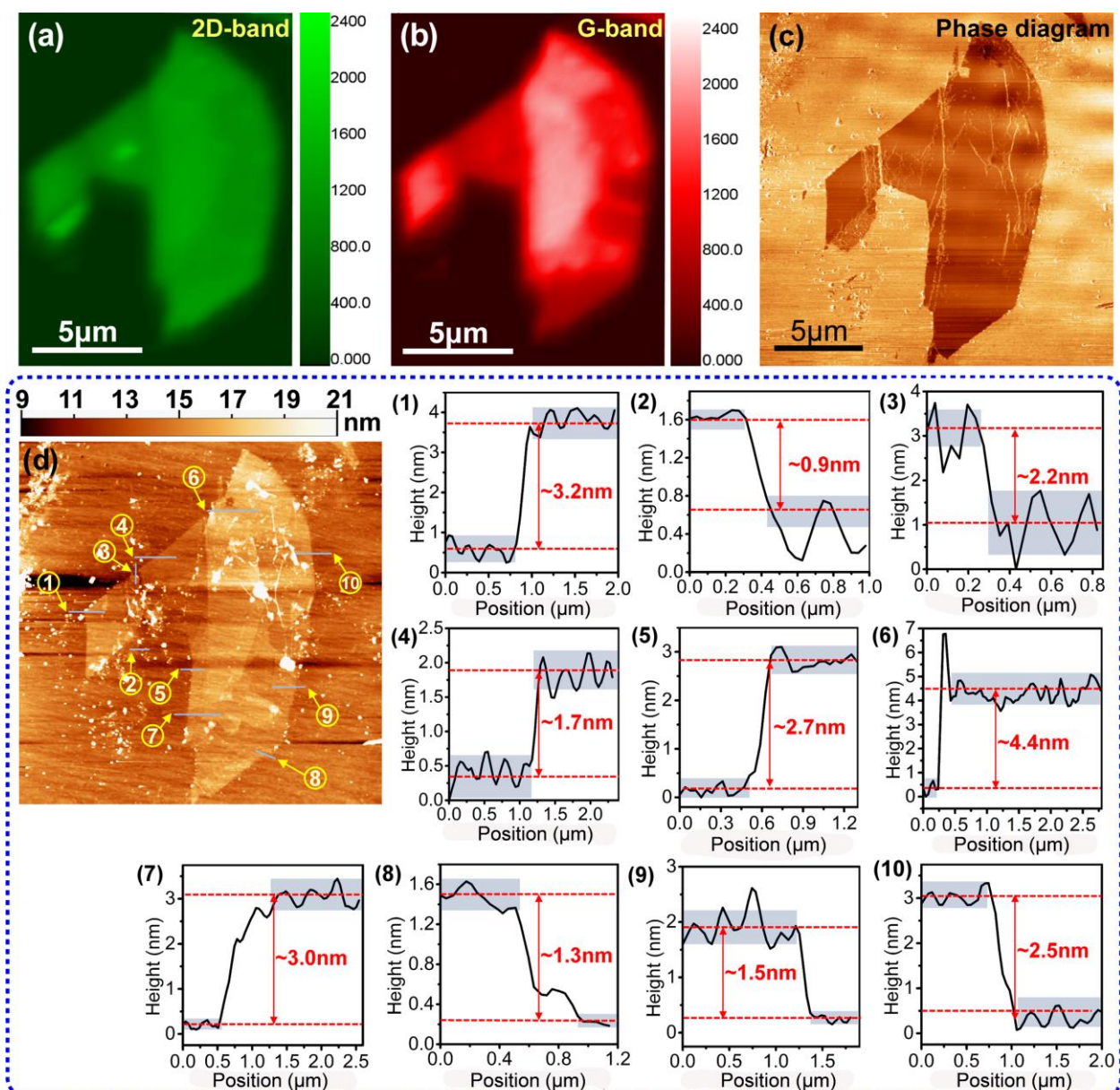


# ***In-situ* imaging and control of layer-by-layer femtosecond laser thinning of graphene**

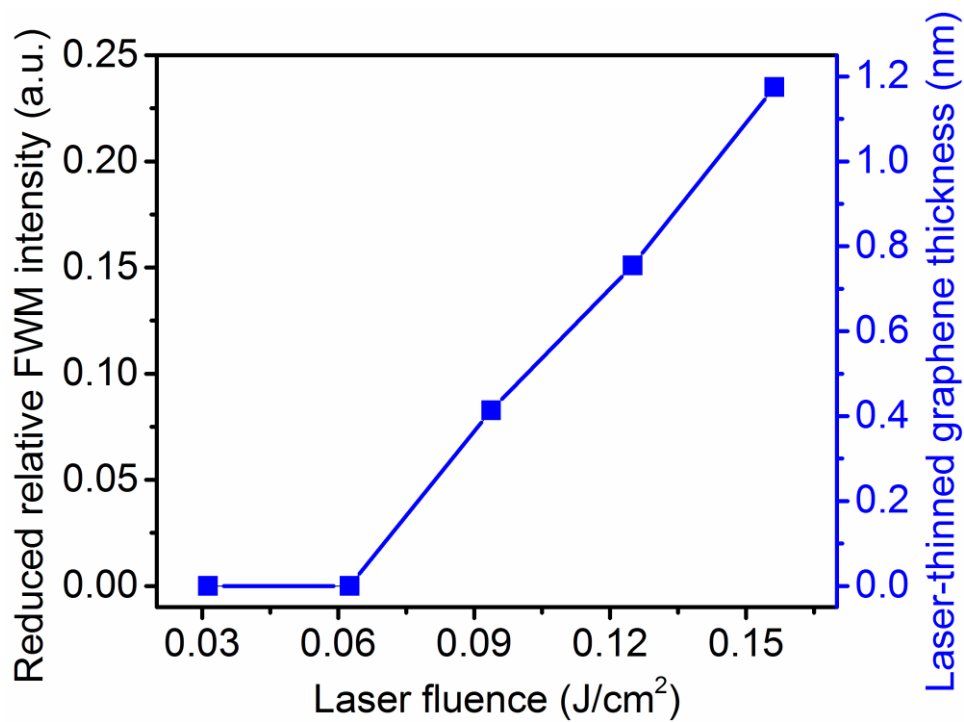
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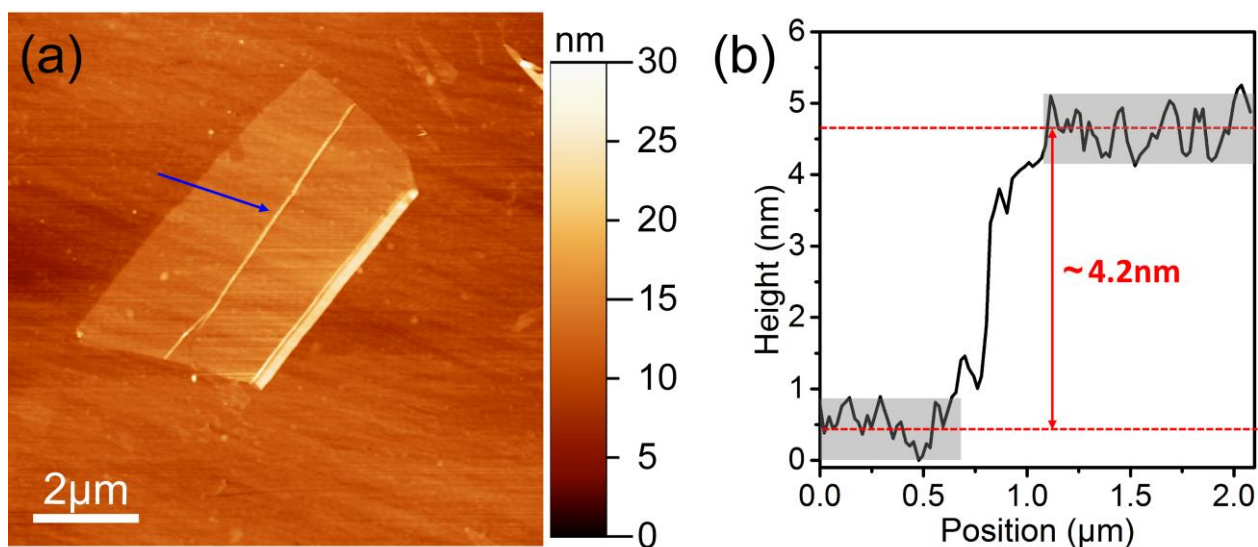
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**Figure S1.** Raman mapping of (a) 2D-band, (b) G-band, and (c) phase diagram of few-layer graphene in Fig. 3a; (d) AFM image of the few-layer graphene and (1-10) corresponding thickness profiles along the lines in (d).



**Figure S2.** Fluence threshold for the fs laser thinning of few-layer exfoliated graphene with a thickness of 5 nm. (pulse duration: 100 fs, wavelength: 800 nm)



**Figure S3.** (a) AFM image of the few-layer graphene; (b) the corresponding thickness profile along the line in (a).