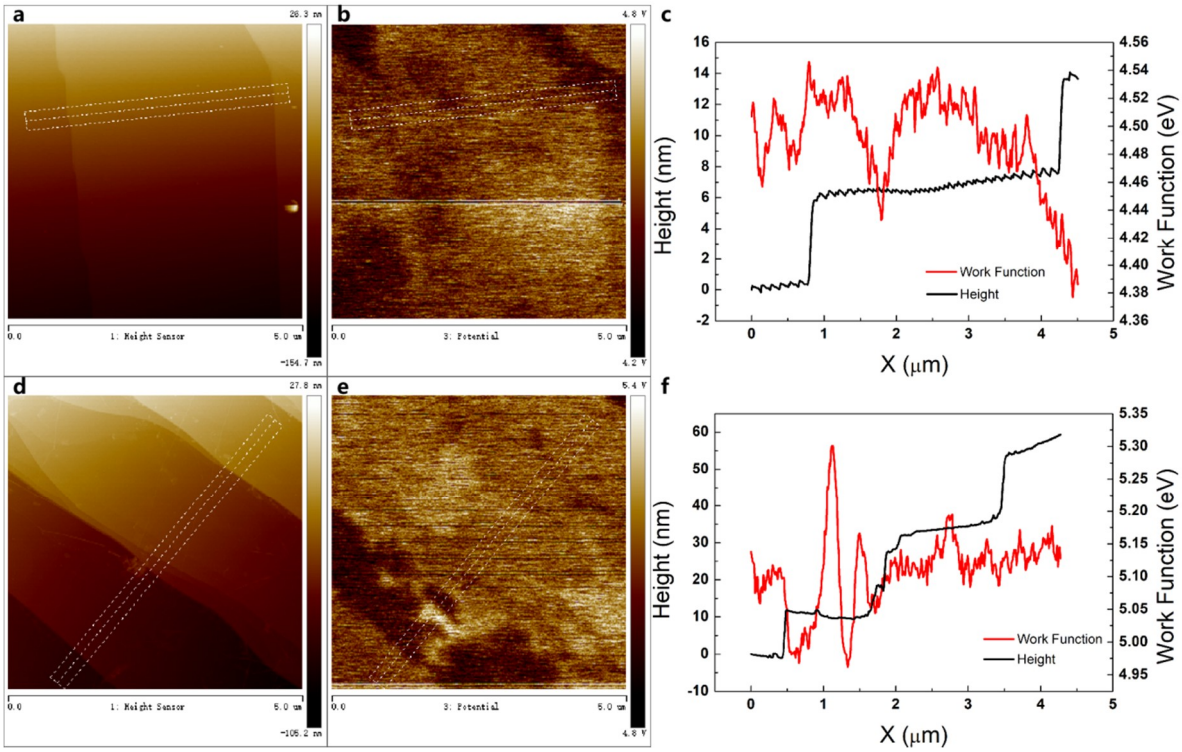
Response to Reviewer 3 Comments

Point 1: Fig 2 b) and c). AFM (I assume tapping mode) results are not compensated, nor normalized to the 0 nm value. Also the scans look like during the scan the integral/ proportional gain were not adjusted. It has resulted in apparently well resolved image, which nevertheless does not take any features into consideration. And sorry, but 2 d) looks like a systematic drift.

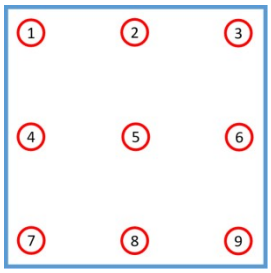
Response 1: Thank you for your review. And the AFM test was carried out again We regained the AFM image of the EG sample (a) and QFSG sample (d). We also obtained KPFM data for EG sample (b) and QFSG sample (e) in the same size area (5×5 Micron2). And the height distribution and work function distribution of EG sample (c) and QFSG sample (f) were obtained from the white rectangular area in (a), (b), (d) and (e).



Point 2: Fig 4) a) and b). Why are the Raman spectra shown as waterfall? The reason of using random points on the structure (of which SEM is still not provided- even if the sample is not conductive- that should be possible at low acceleration voltages) is not of highest scientific soundness, unfortunately.

Response 2: I am sorry that our expression has caused your misunderstanding. In our experiment, the random points measurement for Raman is performed according to the fixed relative position on the sample but in random order. The distribution diagram of the test points is as follows (the circle in the figure is the position of the test point, and the number does not represent the test sequence). The horizontal and vertical distance between each two test points is 2 millimeter. And we show the Raman spectra as

waterfall to make the features of each test point clearly displayed. We also added the SEM image of the sample surface to the Supplementary Materials.



Point 3: Please combine Fig. 5 into a), b) c) d) insets in 4 quadrants as one image. Same for the Fig 2 and 3 (make sure that all the scans are of same area please, meaning e.g. 5 x 5 um). Inset d may be even omitted.

Response 3: Thanks for your suggestion and we have integrated the diagrams by category.

Point 4: Please provide SEM image of the device

Response 4: We have added SEM image of EG sample and QFSG sample to the Supplementary Materials.

Point 5: Please describe all the axes on the Fig. 4.

Response 5: In Figure 4, the abscissa (X axis) is the Raman shift which is the difference of the light frequency between the incident light and the Stokes line (or the anti-Stokes line) caused by Raman scattering. and it is represented by the wave number. The ordinate (Z axis) is Raman light intensity. The Y axis has no practical meaning and It's presence makes the Raman spectra of each test point displayed clearly.