Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Controllable growth of substrate-scale 2D $ReSe_2$ thin films and their application for molecular detection via SERS technique

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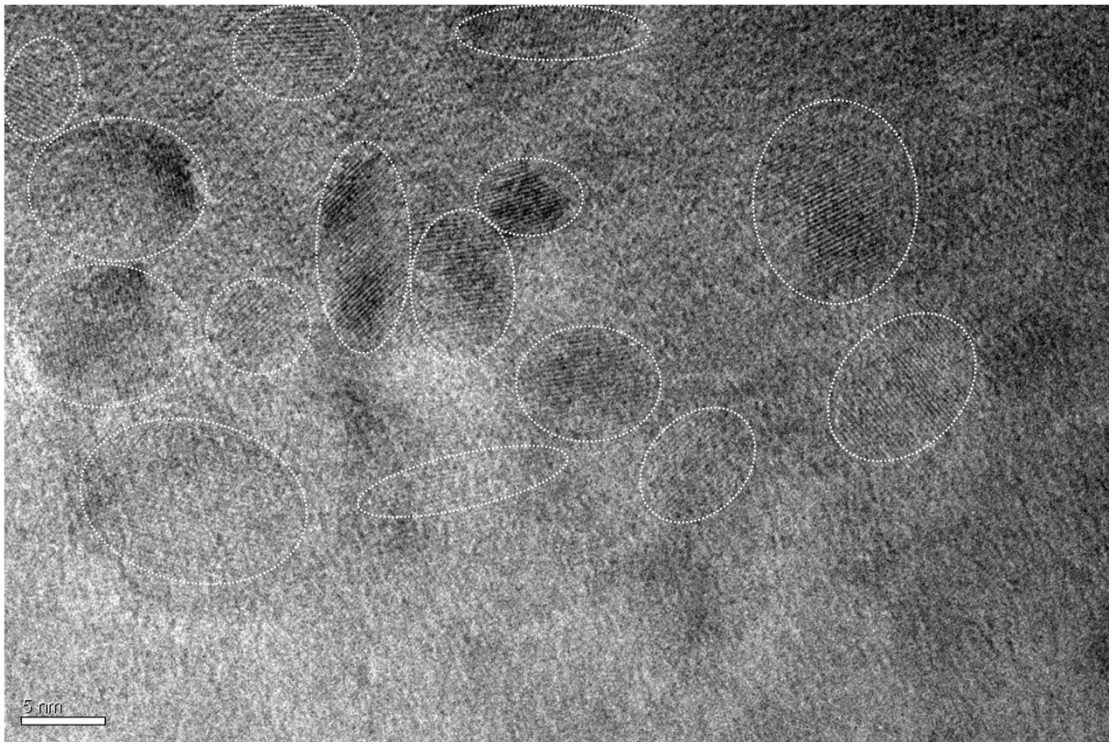

Figure S1 HRTEM image of $ReSe_2$ films

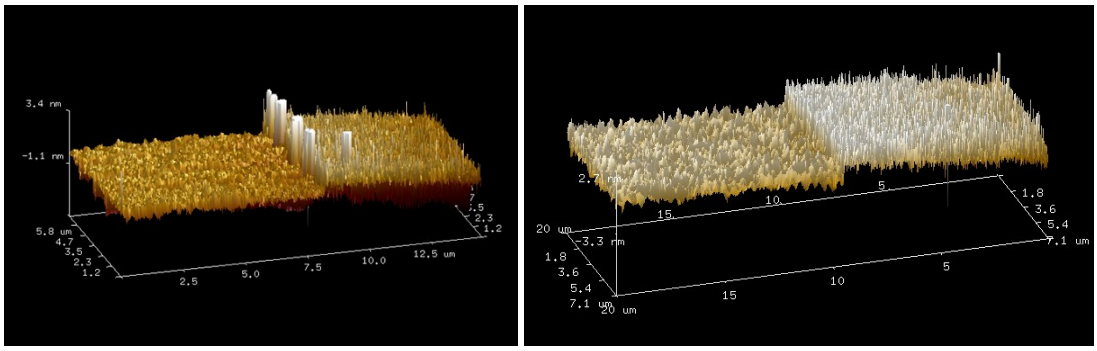

Figure S2 AFM images of 2D $ReSe_2$ films with 2 layers (a) and 4 layers (b)

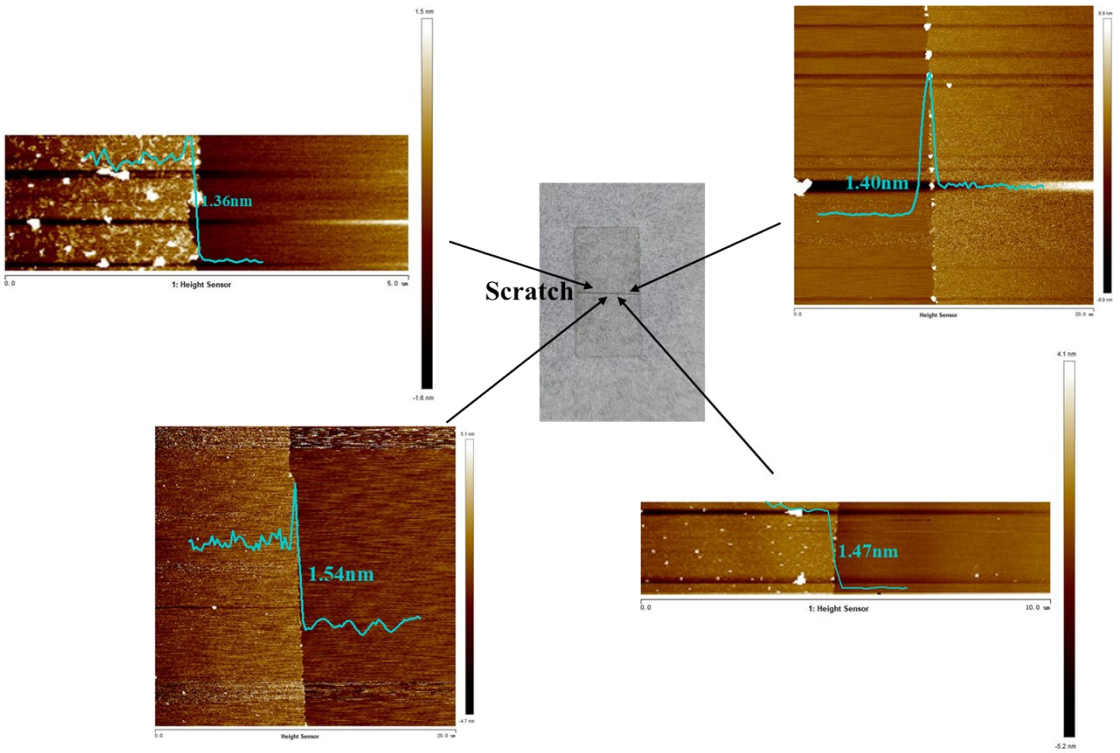

Figure S3 AFM images of bilayer $ReSe_2$ films and height profiles in 4 different positions, where steps were formed by deliberately scratching on the films.

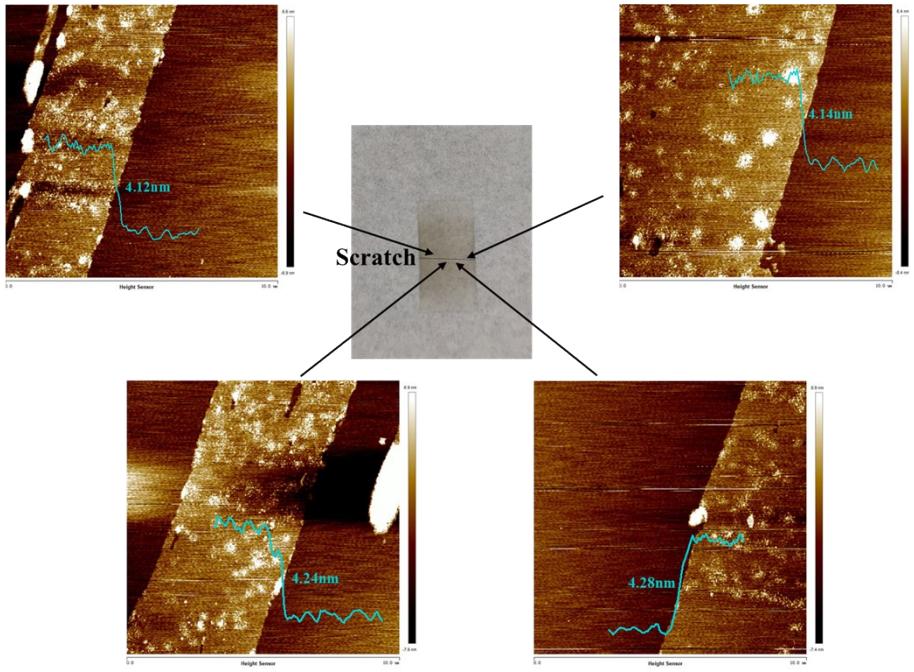

Figure S4 AFM images of 7-layer $ReSe_2$ films and height profiles in 4 different positions, where steps were formed by deliberately scratching on the films.

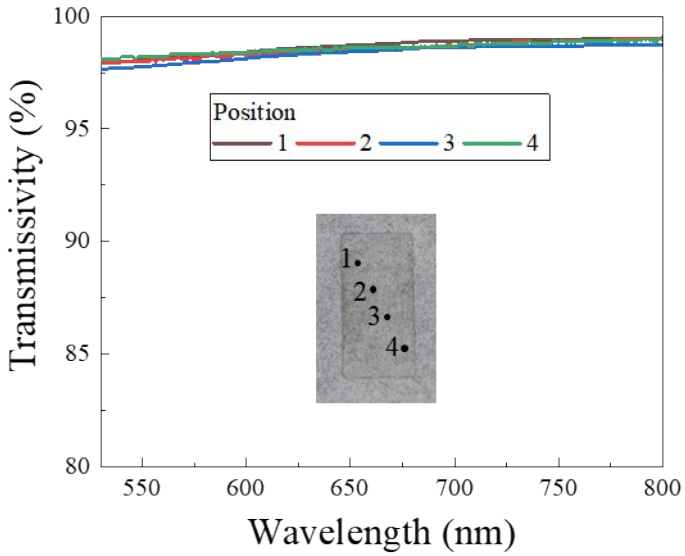

Figure S5 Transmittance spectra of 4 different positions in the sample along the carrier gas direction.

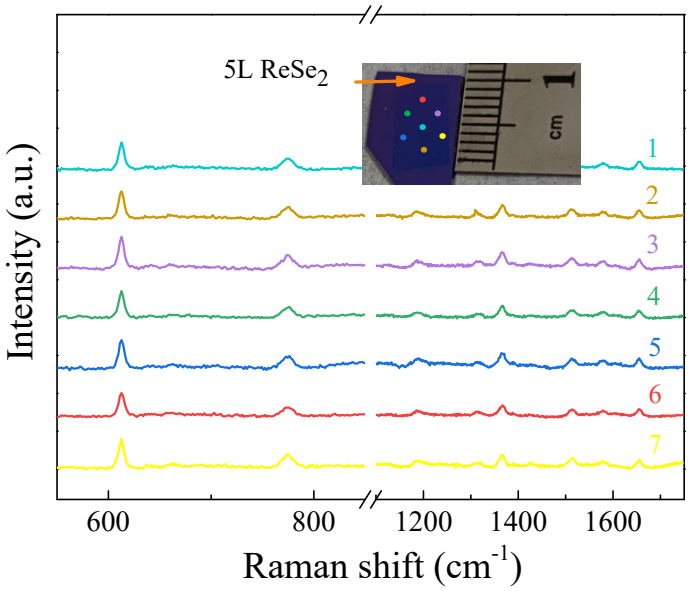

Figure S6 Raman spectra of 10^{-5}M R6G on 5L $ReSe_2$ films, which were collected on 7 different spots as shown in the inset with different colors.

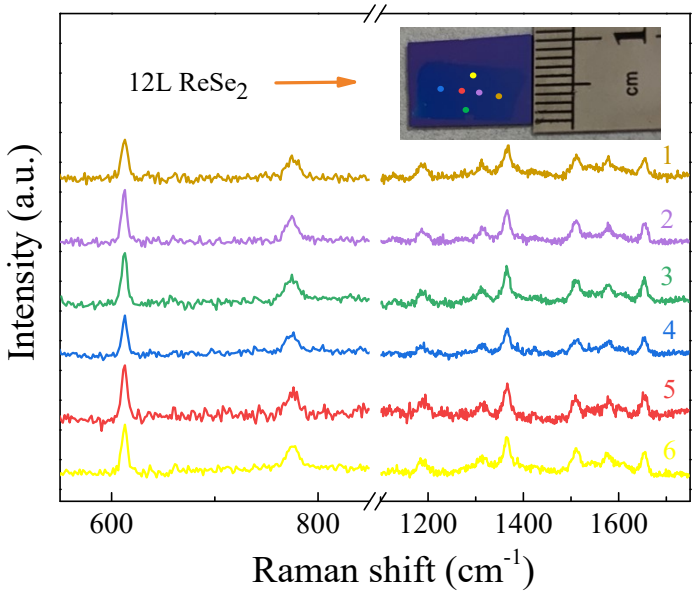

Figure S7 Raman spectra of 10^{-5}M R6G on 12L $ReSe_2$ films, which were collected on 6 different spots as shown in the inset with different colors.

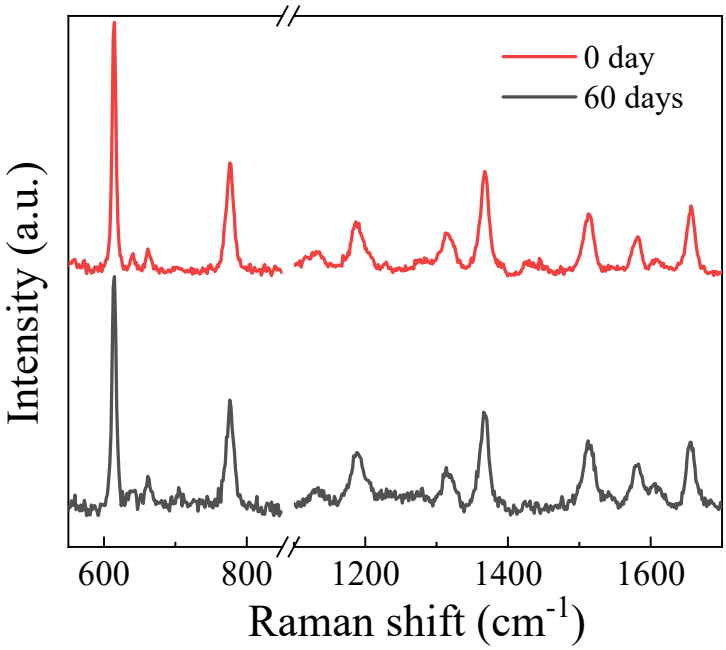

Figure S8 Raman spectra of R6G on 1L $ReSe_2$ film after exposure in the air for 60 days.

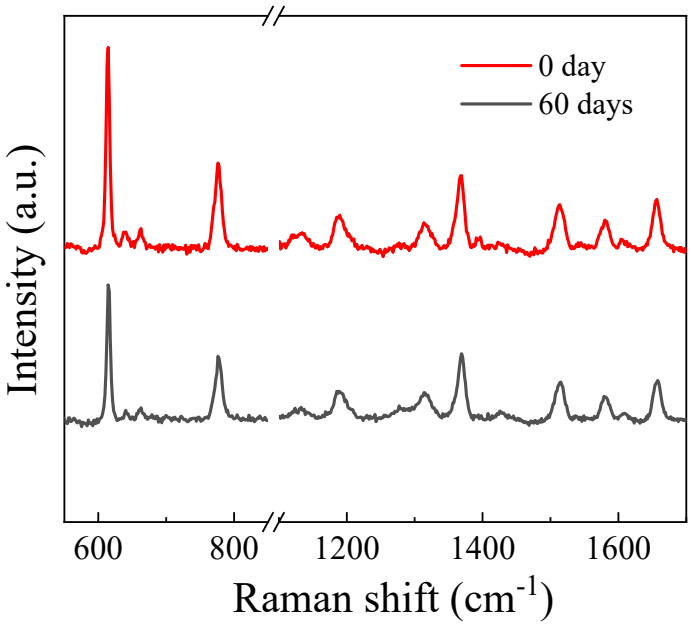

Figure S9 Raman spectra of R6G on 4L $ReSe_2$ film after exposure in the air for 60 days.

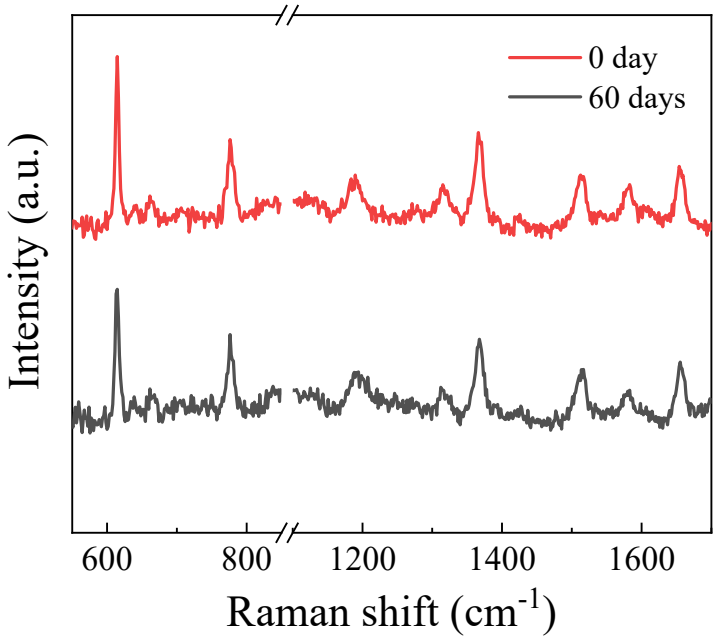

Figure S10 Raman spectra of R6G on 10L $ReSe_2$ film after exposure in the air for 60 days.