Orientation-dependent optical characterization of atomically thin transition

metal ditellurides

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Supporting figure 1. (a) Growth profile for MoTe₂ crystal growth; Scale bar: 200 µm. (b) and (e) Optical image and Raman mapping of 1T'-MoTe₂. (c) and (f) Optical image and Raman mapping of hexagonal 2H-MoTe₂. (d) and (g) Optical image and Raman mapping of triangular 2H-MoTe₂. Scale bar: 10 µm.



Supporting figure 2. (a) Optical images of 1L-5L MoTe₂ crystals on 300 nm SiO₂/Si. (b) AFM topography and (c) Height profile indicate the thickness of corresponding crystal; Scale bar, 5 μ m.



Supporting figure 3. (a) Non- polarized and polarized optical images with different rotational angles and AFM topography of 3L 1T'-WTe₂; Scale bar, 10 µm. (b) Raman spectra from 0° to 180° of polarized light and corresponding polar plots.



Supporting figure 4. (a) and (b) Dark-field TEM image and SAED pattern taken at GB region of 1T'-MoTe₂, respectively. (c) and (d) Dark-field TEM image and SAED pattern taken at GB region of 2H-MoTe₂, respectively. Diffraction patterns of each grains are selected together for dark-field TEM images of 1T'- and 2H-MoTe₂; Scale bar, 20 nm.