Supporting information

Gate-tunable interfacial properties of in-plane ML MX₂ 1T'-2H heterojunctions

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**Figure S1.** (a) ~ (f): Interfacial structures of the contact configuration for the ML MoS$_2$ 1T-2H in-plane and the ML MX$_2$ 1T’-2H in-plane heterojunctions before optimization. The 1T’/1T and 2H phase within one period at the interface are zoomed in the rectangle black dash line.
Figure S2: Energy- and space-dependent typical charge density of the MIGS in the ML MoTe$_2$ and WS$_2$ 1T'-2H in-plane heterojunctions. The MIGS at the interface are circled by the dark blue right triangle.
Figure S3. Comparison of the SBHs ($\Phi^e_W/\Phi^h_W$) of the work function approximation between this work and Wei’s work.¹
Figure S4. Comparison of the band structure and the transport SBH of the ML MoTe$_2$ 1T'-2H in-plane heterojunction without and with spin orbit coupling (SOC).

Reference