

Supplementary Information

Material Synthesis and Device Aspects of Monolayer Tungsten Diselenide

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1. Impact of channel etching and SEM scan on the carrier mobility

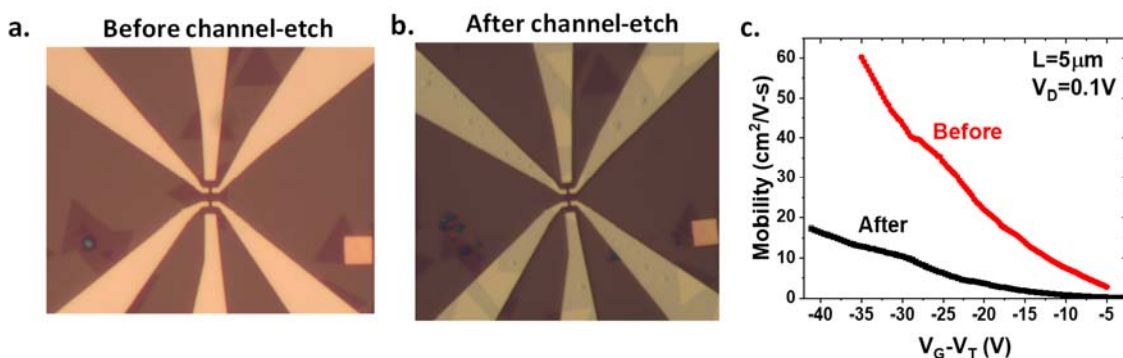


Figure S1. Optical image of a WSe₂ Hall-bar device before (a) and after (b) channel etching. (c) The extracted mobility of the Hall-bar device before and after channel etching and SEM scan.

2. Temperature dependence of channel mobility after channel etching and SEM scan

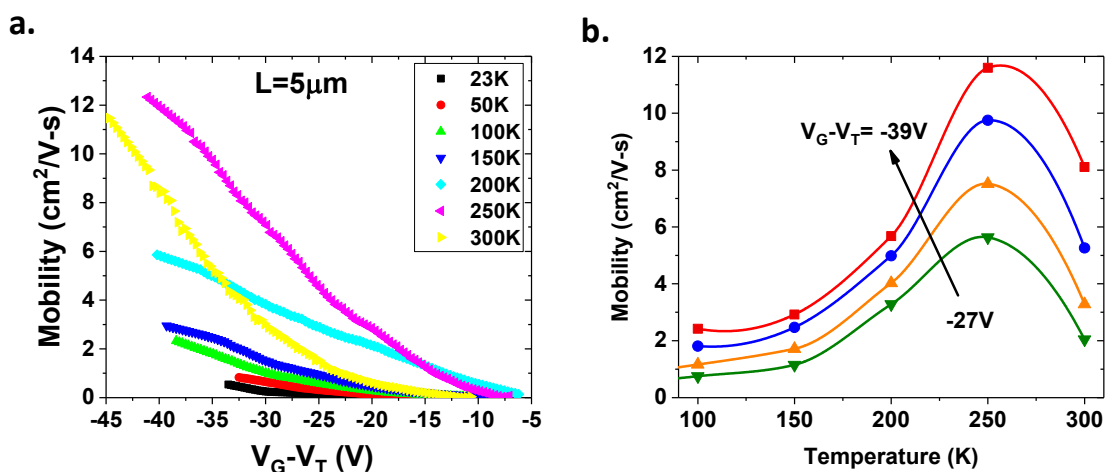


Figure S2. Temperature dependence of channel mobility in a WSe₂ Hall-bar device after channel-cut and SEM scan. (c) Extracted field-effect mobility as a function of gate overdrive, $V_G - V_T$, at various temperatures. (d) Temperature dependence of the field-effect mobility at various gate overdrives.