Modulation of Charge Conduction in ZnO Nanowires Through Selective Surface Molecular Functionalization
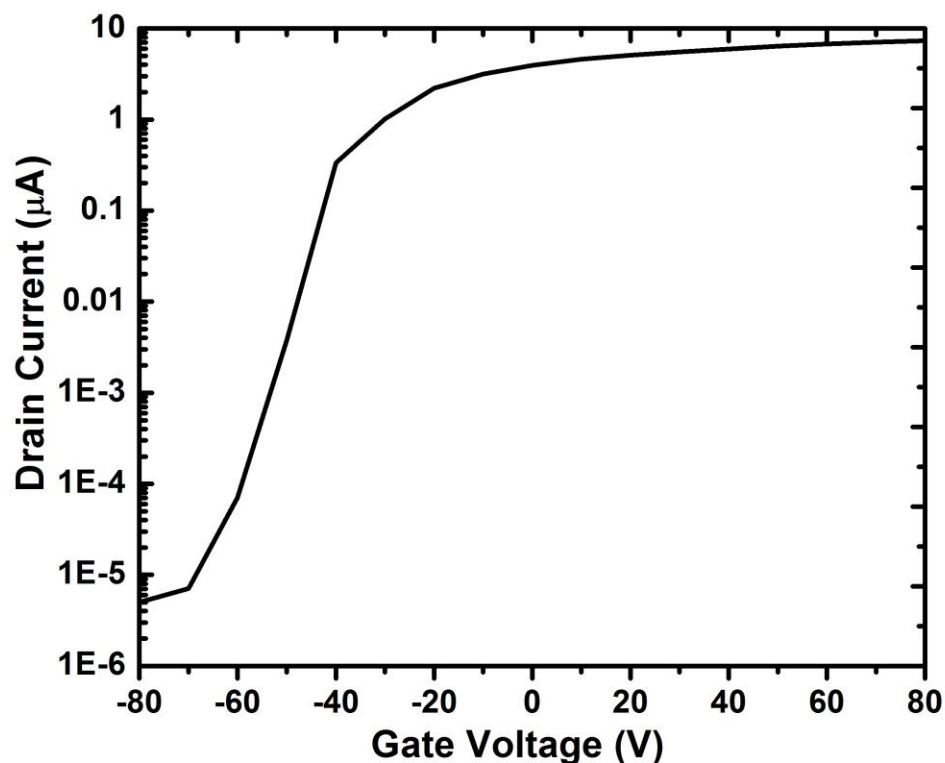
- Supplementary Information

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Supplementary graphs: Gate response of ZnO nanowire device before and after functionalization

Figure S1 Source-drain current vs gate voltage plot for ZnO field-effect transistor before chemical treatment, using heavily doped Si substrate as back gate. Source-drain bias V_{ds} was 1 V. Current magnitude changes 6 orders of magnitude, and can be completely shut-off at negative gate bias. Electron mobility of the ZnO NW device was calculated to be 127 cm^2/ Vs.
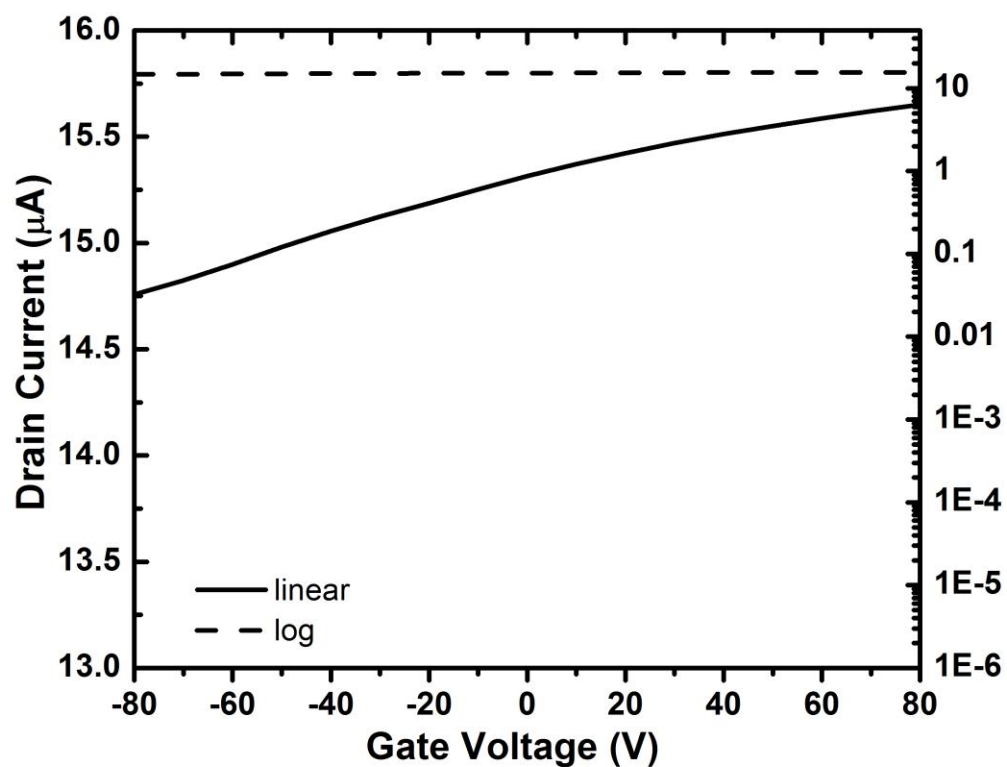
Figure S2 Source-drain current vs gate voltage plot for ZnO field-effect transistor after device was functionalized with APTES. Source-drain bias V_{ds} was 1 V. Dashed line: current in log scale; solid line: current in linear scale.