Supporting Information for:

Asymmetric Metal/α-In_2Se_3/Si Crossbar Ferroelectric Semiconductor Junction

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1. Wake-up effect in α-In_2O_3 FSJ

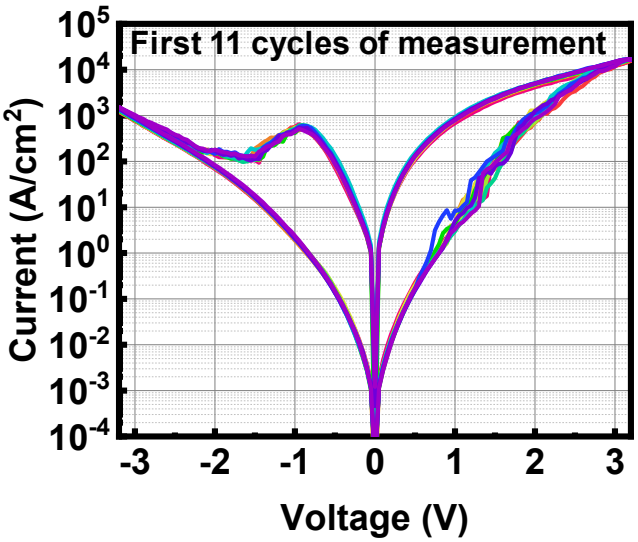

Figure S1. The first 11 I-V measurements of a fresh α-In_2Se_3 asymmetric c-FSJ, showing wake-up free characteristics.

2. Thickness-dependence in α-In_2O_3 FSJ

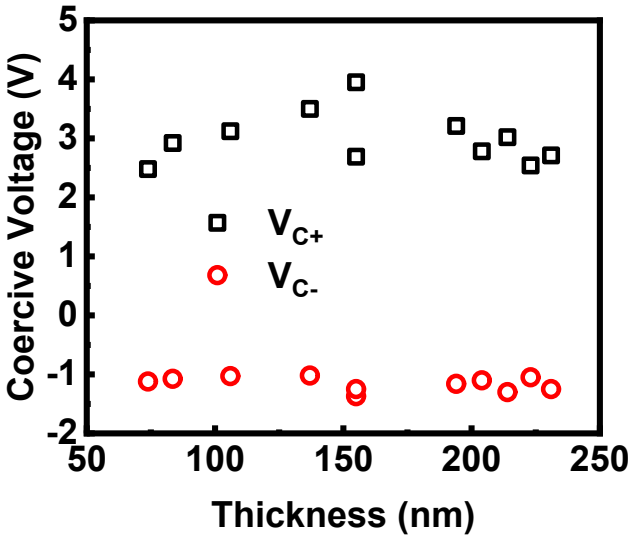

Figure S2. Thickness-dependent coercive voltages of α-In_2Se_3 asymmetric c-FSJs, with thickness from 74 nm to 231 nm.

3. Retention and endurance of metal/α-In_2Se_3/insulator/metal c-FSJs

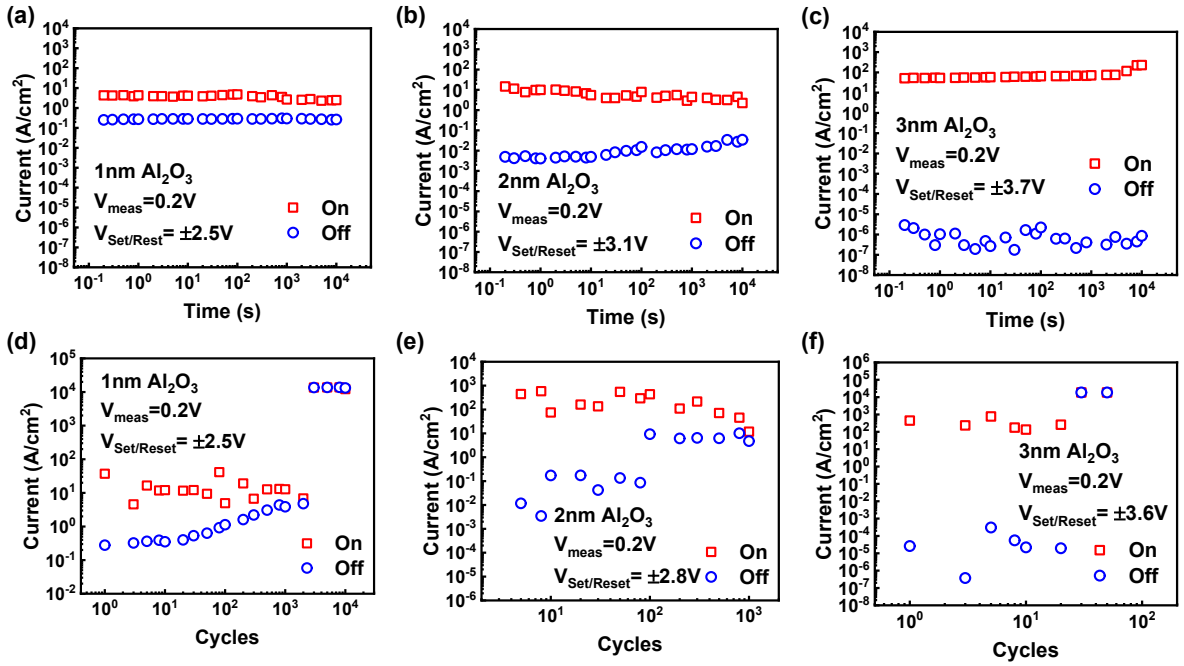

Figure S3. Retention (a-c) and endurance (d-f) measurements for metal/In_2Se_3/insulator/metal c-FSJs with different Al_2O_3 thicknesses of 1/2/3 nm.