

# Reconfigurable organic ambipolar optoelectronic synaptic transistor for information security access

Xin-Qi Ma<sup>1,2</sup>, Wenbin Zhang<sup>2</sup>, Qi Zheng<sup>2</sup>, Wenbiao Niu<sup>2</sup>, Zherui Zhao<sup>2</sup>, Kui Zhou,<sup>2,3</sup> Meng Zhang<sup>1,4</sup>, Shuangmei Xue<sup>1,4</sup>, Liangchao Guo<sup>5</sup>, Yan Yan<sup>1,4</sup>, Guanglong Ding<sup>1,4</sup>,  
†, Su-Ting Han<sup>6</sup>, Vellaisamy A. L. Roy,<sup>7</sup> and Ye Zhou<sup>1,2,†</sup>

<sup>1</sup> State Key Laboratory of Radio Frequency Heterogeneous Integration, Shenzhen University, Shenzhen 518060, P. R. China.

<sup>2</sup> Institute for Advanced Study, Shenzhen University, Shenzhen 518060, P. R. China.

<sup>3</sup> Zhuhai Construction Quality Supervision and Inspection Station, Zhuhai, 519015, P. R. China.

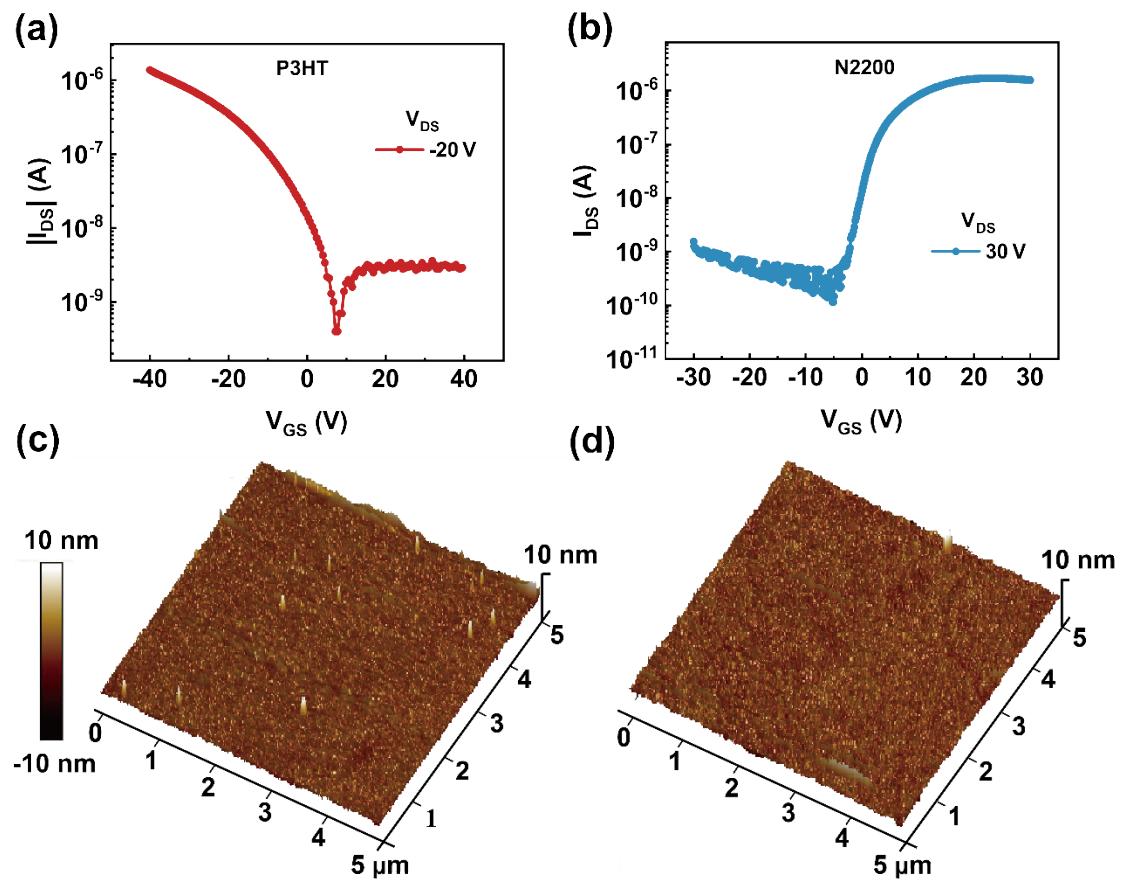
<sup>4</sup> College of Electronics and Information Engineering, Shenzhen University, Shenzhen 518060, P. R. China.

<sup>5</sup> College of Mechanical Engineering, Yangzhou University, Yangzhou 225127, P. R. China.

<sup>6</sup> Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University, Hung Hom, Hong Kong SAR, P. R. China.

<sup>7</sup> School of Science and Technology, School of Science and Technology, Hong Kong Metropolitan University, Ho Man Tin, Hong Kong, P. R. China.

Correspondence to: G. Ding, [dinggl@szu.edu.cn](mailto:dinggl@szu.edu.cn); Y. Zhou, [yezhou@szu.edu.cn](mailto:yezhou@szu.edu.cn)



Supplementary Fig. 1. (a and b) Transfer curves of P3HT (a) and N2200 (b) based transistor. (c and d) AFM images of pure P3HT (c) and (d) N2200 films.