Supporting information

Localized surface plasmon resonance-mediated charge trapping/detrapping for core-shell nanorod-based optical memory cells

Li Zhou,[a,b] Su-Ting Han,*[a] Shiwei Shu,[a,b] Jiaqing Zhuang,[c] Yan Yan,[a] Qi-Jun Sun,[c] Ye Zhou,*[a] and V. A. L. Roy*[c]

[a] College of Electronics Science & Technology and Institute for Advanced Study, Shenzhen University, Shenzhen, China.
*Email: sutinghan@szu.edu.cn; yezhou@szu.edu.cn
[b] Key Laboratory of Optoelectronic Devices and Systems of Ministry of Education and Guangdong Province, College of Optoelectronic Engineering, Shenzhen University, Shenzhen, China.
[c] Department of Physics and Materials Science, City University of Hong Kong, Hong Kong, China.
*E-mail: val.roy@cityu.edu.hk

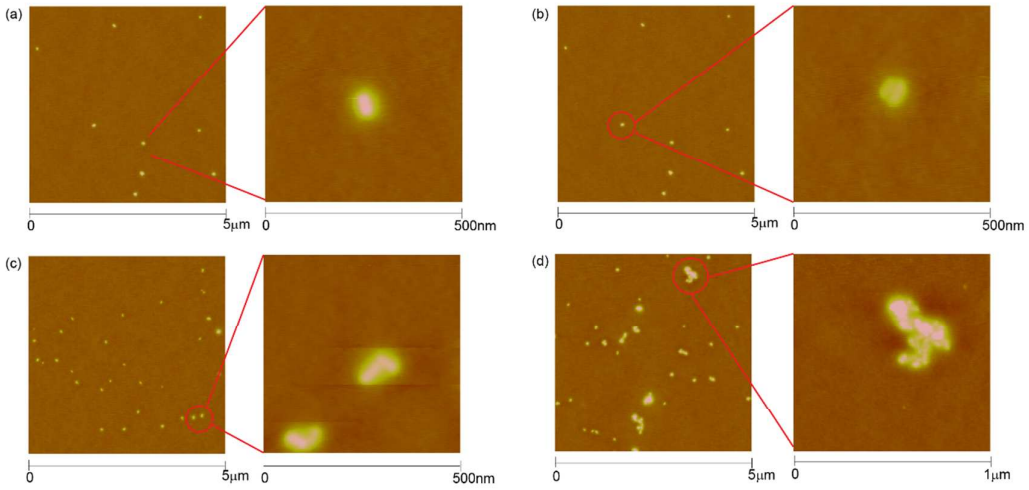

Figure S1. AFM image of (a) NRs-2, (b) NRs-5, (c) NRs-10, (d) NRs-20 films. (Right: small scale)

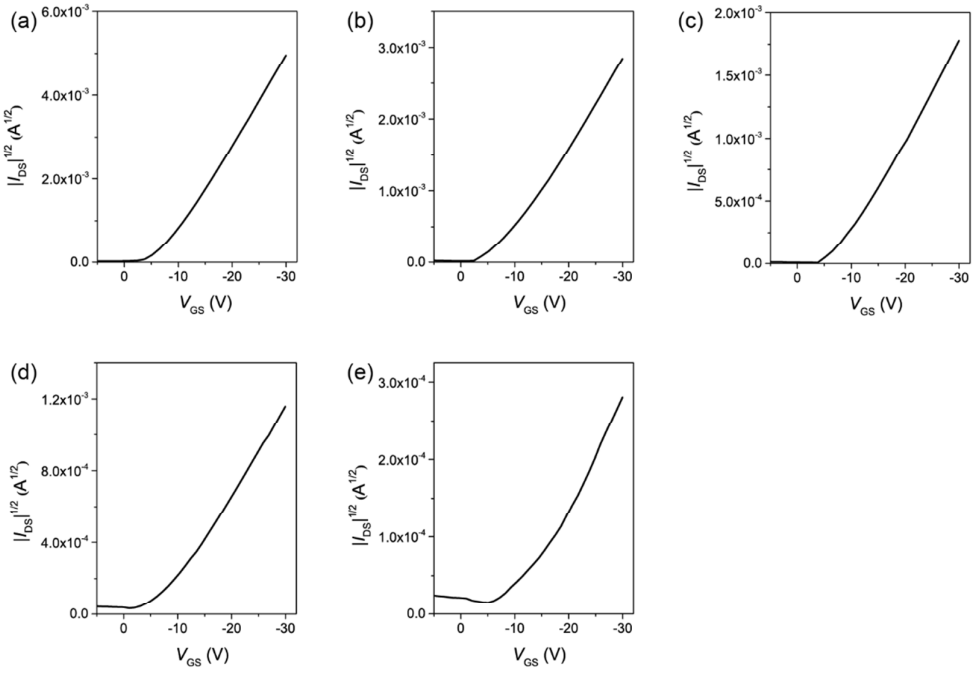

Figure S2 The transfer curves of (a) PVPy, (b) NRs-2, (c) NRs-5, (d) NRs-10, (e) NRs-20 devices at initial state.

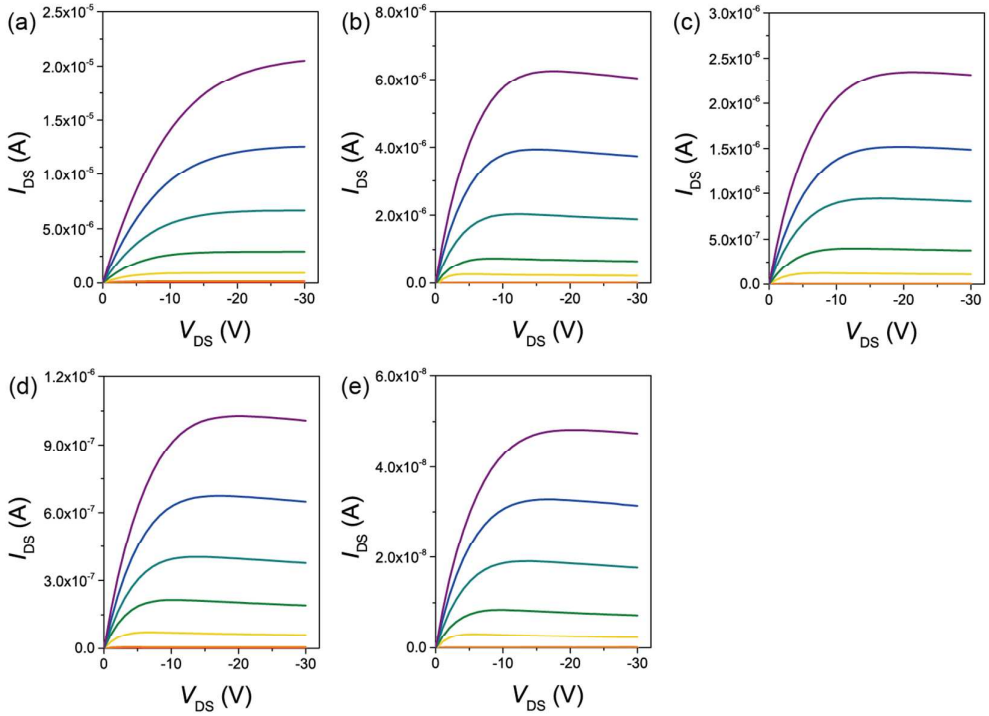

Figure S3 The output curves of (a) PVPy, (b) NRs-2, (c) NRs-5, (d) NRs-10, (e) NRs-20 devices at initial state.

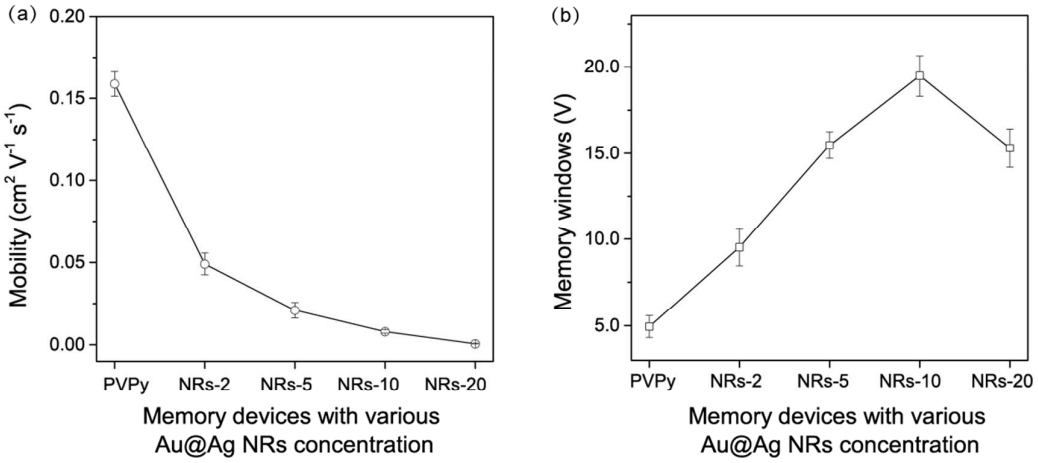

Figure S4 The device statistics of mobility (a) and memory window (b) with various nanorods concentration.

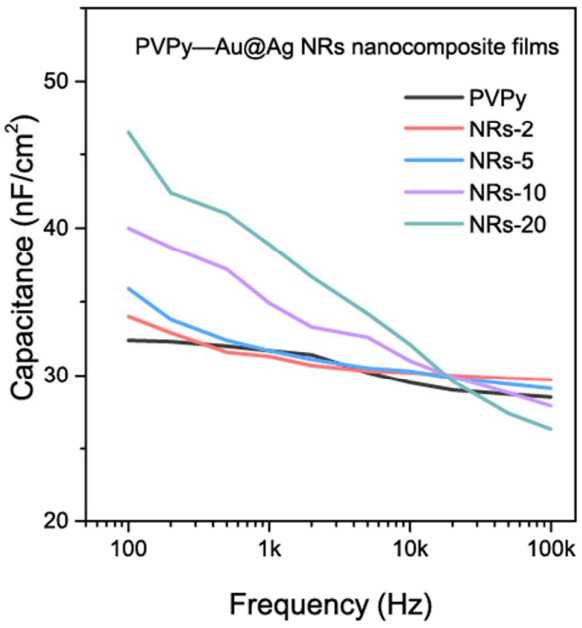

Figure S5 Capacitance per unit area of nanocomposite dielectrics with respect to to various frequencies.

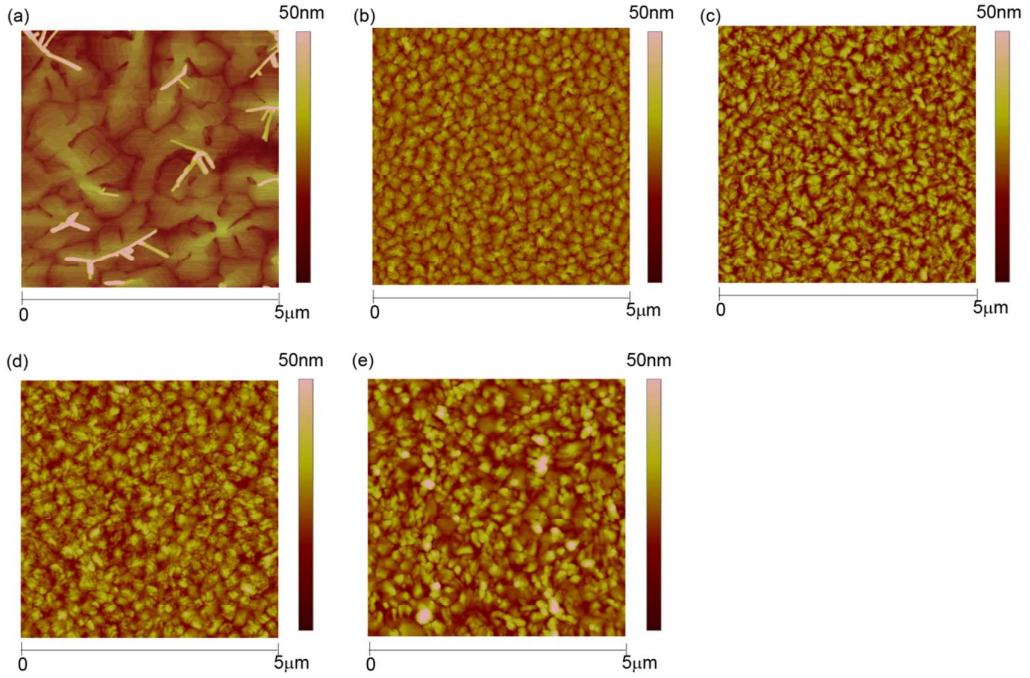

Figure S6 AFM images of pentacene films deposited on (a) PVPy, (b) NRs-2, (c) NRs-5, (d) NRs-10, (e) NRs-20.

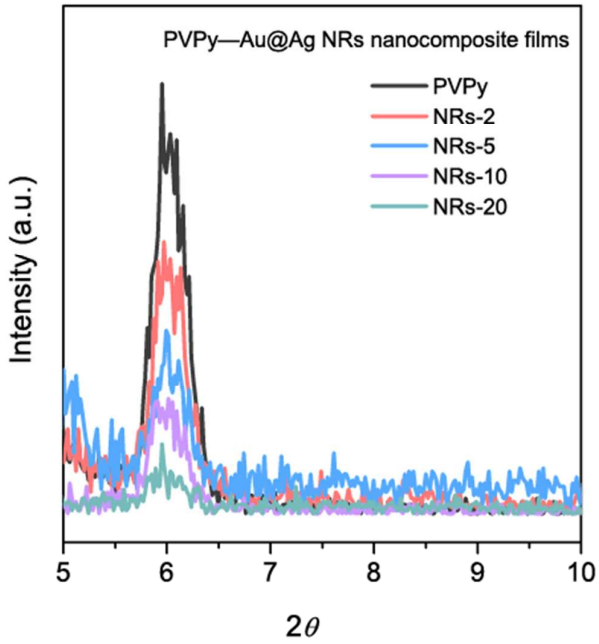

Figure S7 XRD patterns of pentacene films deposited on various nanocomposite films.

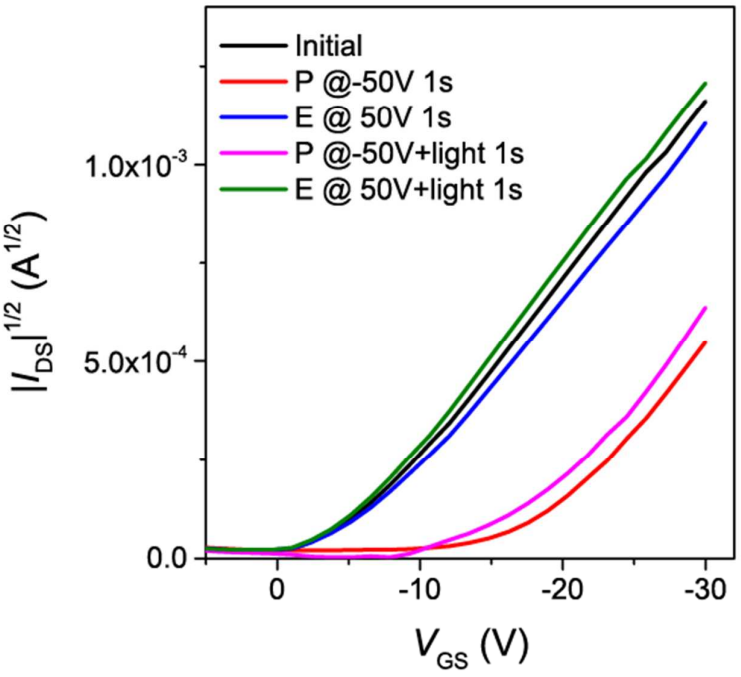

Figure S8 Transfer curve of memory device based on Au NRs with/without light illumination.

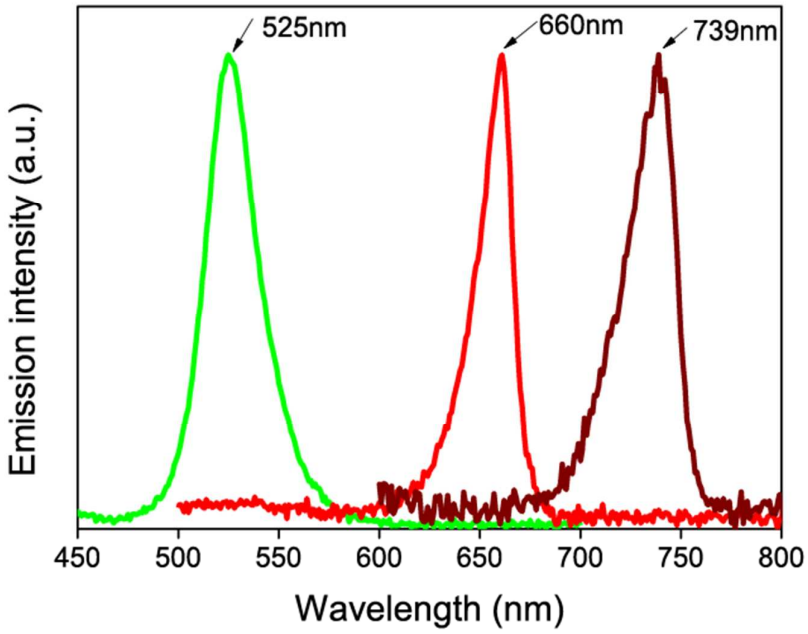

Figure S9 Emission spectra of various light source.

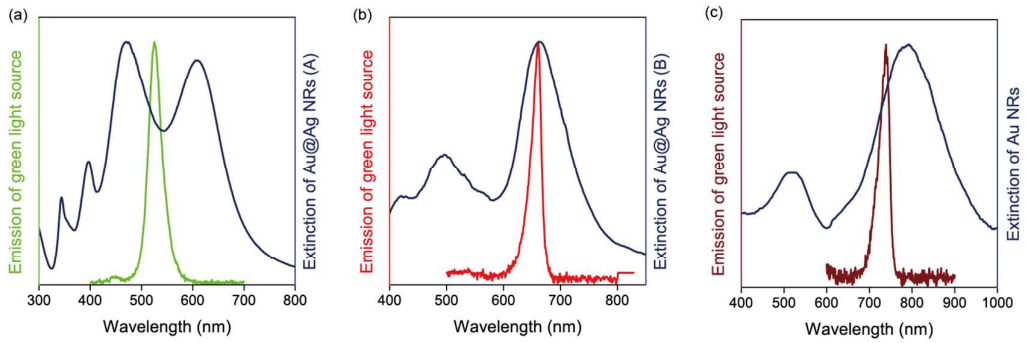

Figure S10 Normalized emission spectra of various light source and extinction spectra of NRs.

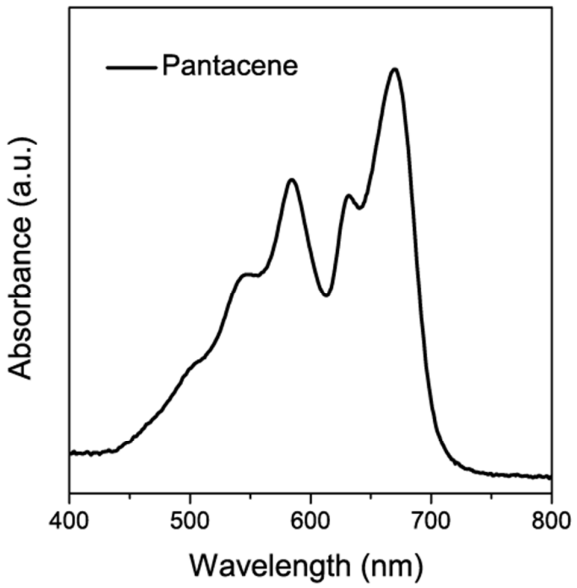

Figure S11 Absorption spectrum of pentacene thin film.

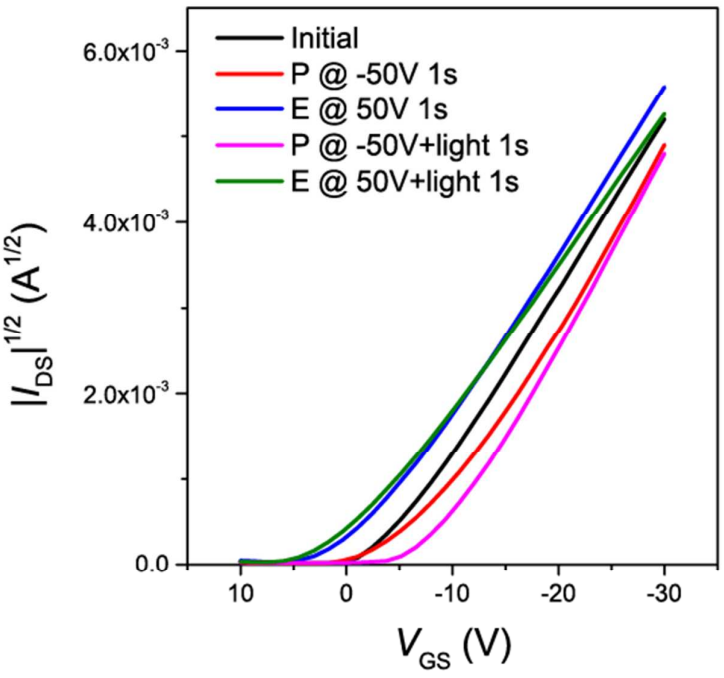

Figure S12 Transfer curve of memory device based on pristine PVPy film with/without light illumination.