

Supplementary Materials

Hybrid 1D/3D-Structured Perovskite as a Highly Selective and Stable Sensor for NO₂ Detection at Room Temperature

Anqi Cheng, Jinru Zhao, Xi-Ao Wang, Zhen Lu, Yan Qi * and Jiankun Sun *

College of Chemistry and Chemical Engineering, Qingdao University, Qingdao 266071, China;

* Correspondence: qddxqy@qdu.edu.cn (Y.Q.); sunjk@qdu.edu.cn (J.S.)

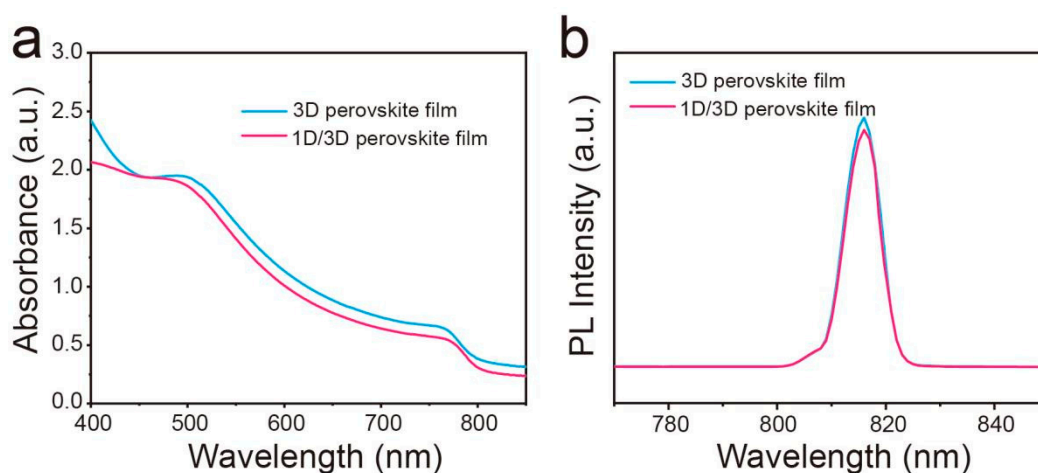


Figure S1. (a) UV and (b) PL images of 3D FACs and 1D/3D PyPbI₃/FACs hybrid-structured perovskite film.

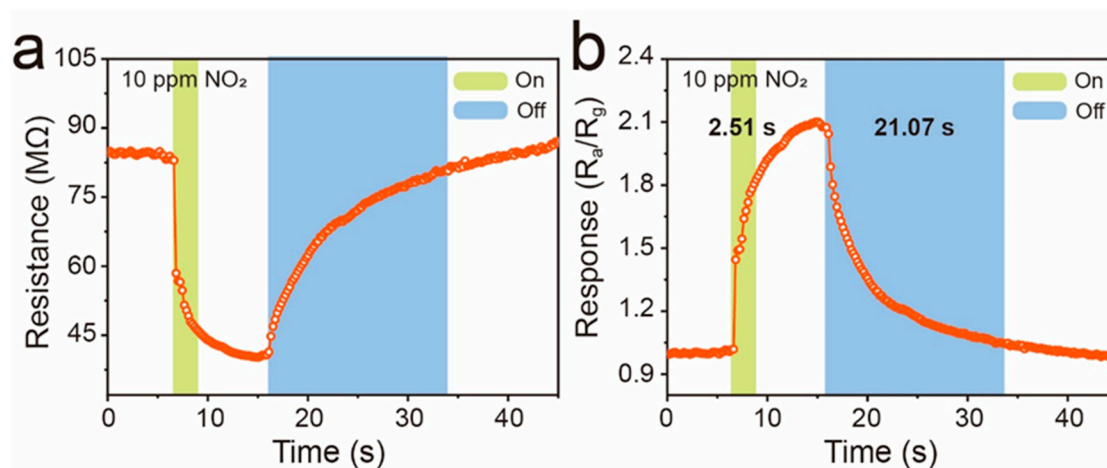


Figure S2. The transient (a) resistance and (b) response of the 3D FACs perovskite-based sensor toward 10 ppm NO₂.

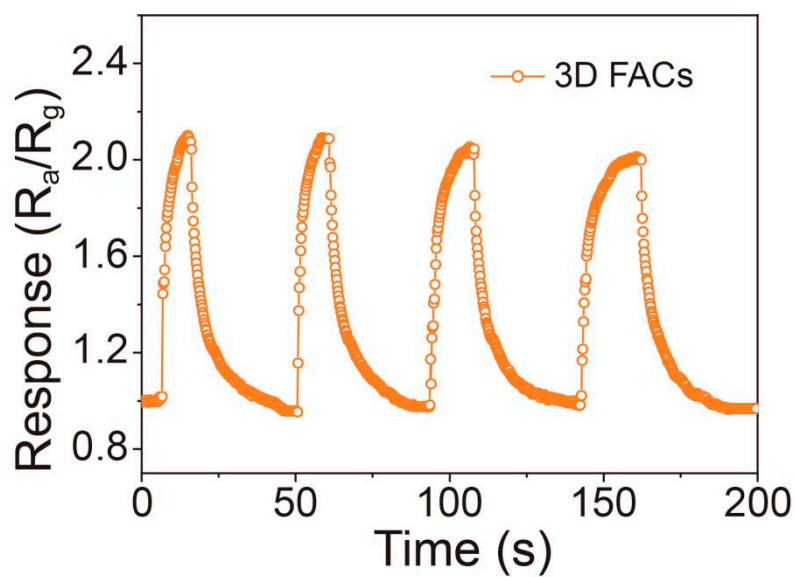


Figure S3. The reversibility of 3D FACs perovskite-based sensor toward 10 ppm NO₂.

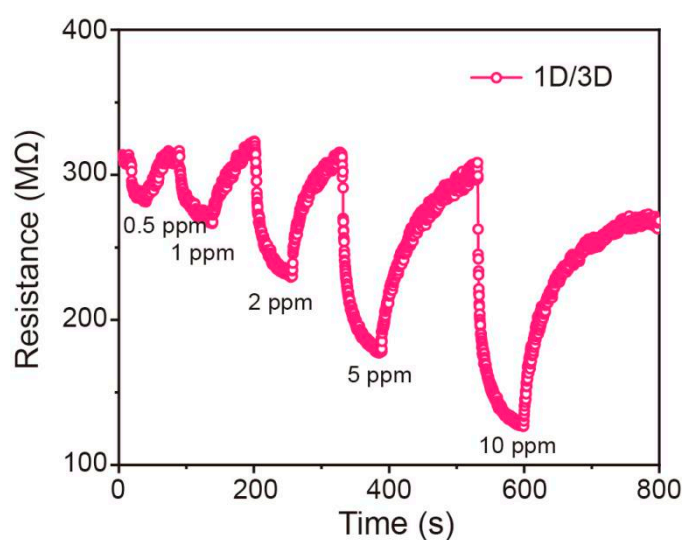


Figure S4. The dynamic resistance variation of the 1D/3D PyPbI₃/FACs hybrid-structured perovskite-based sensor towards different concentrations of NO₂ gas.

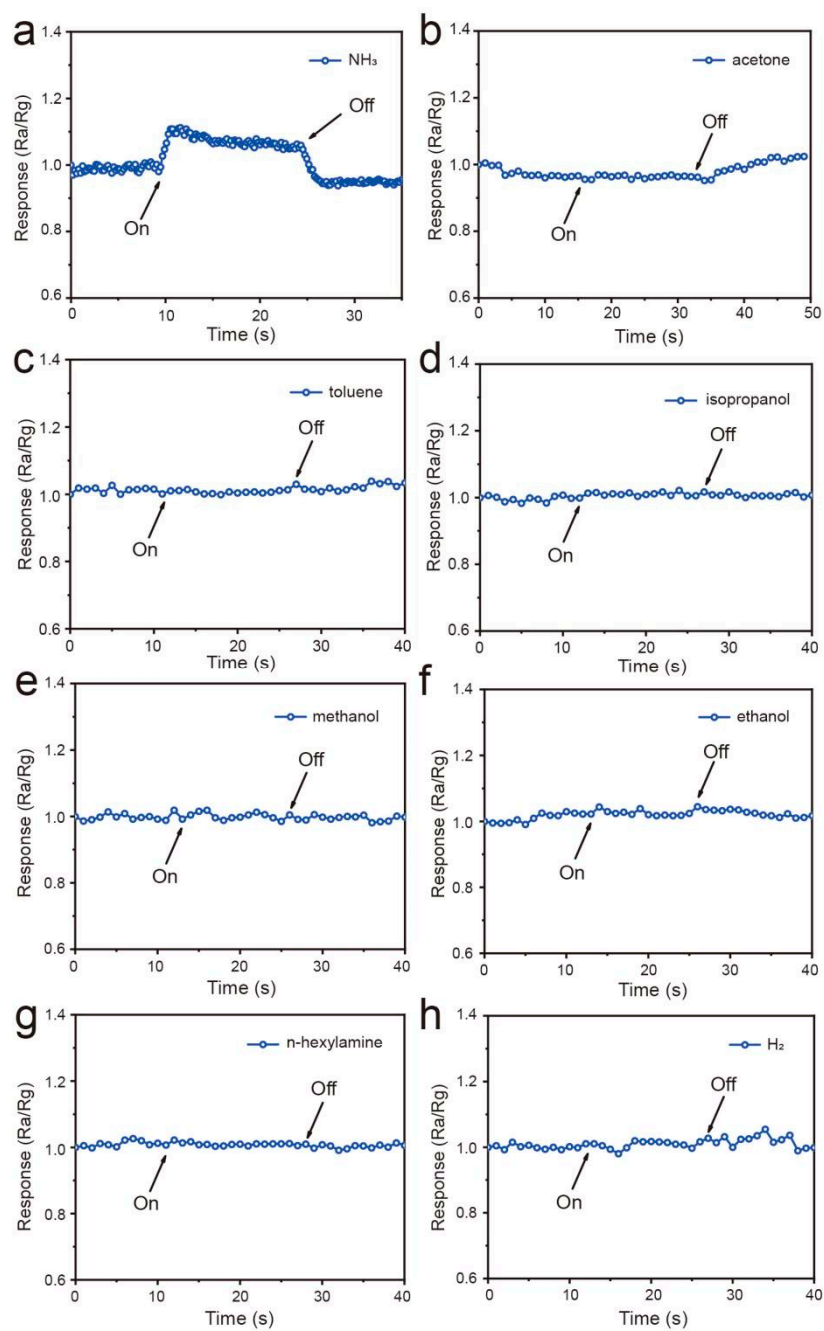


Figure S5. The response of PyPbI₃/FACs hybrid-structured perovskite sensor toward different gases with 10 ppm (a–h).

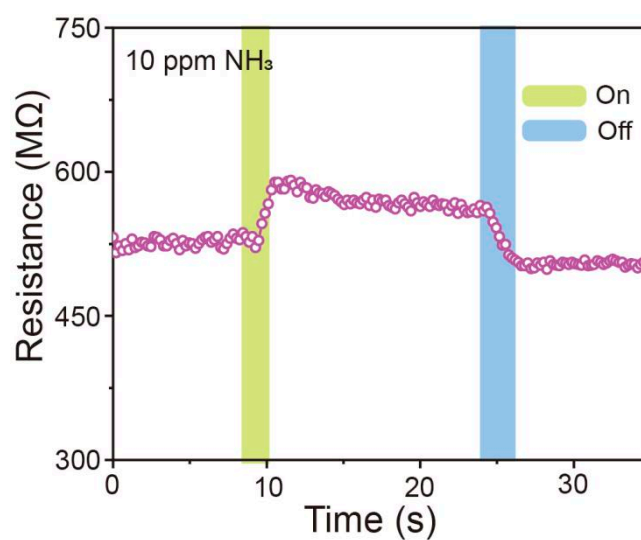


Figure S6. The transient resistance of 1D/3D PyPbI₃/FACs hybrid-structured perovskite-based sensor toward 10 ppm NH₃.

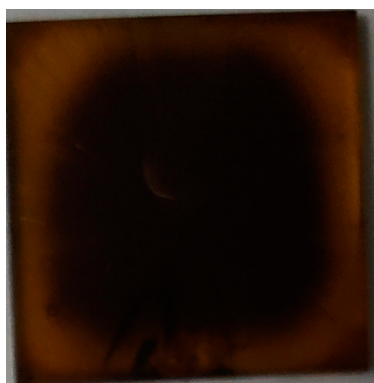


Figure S7. Photograph of 3D FACs film record at 3rd day after exposure in high humidity conditions.

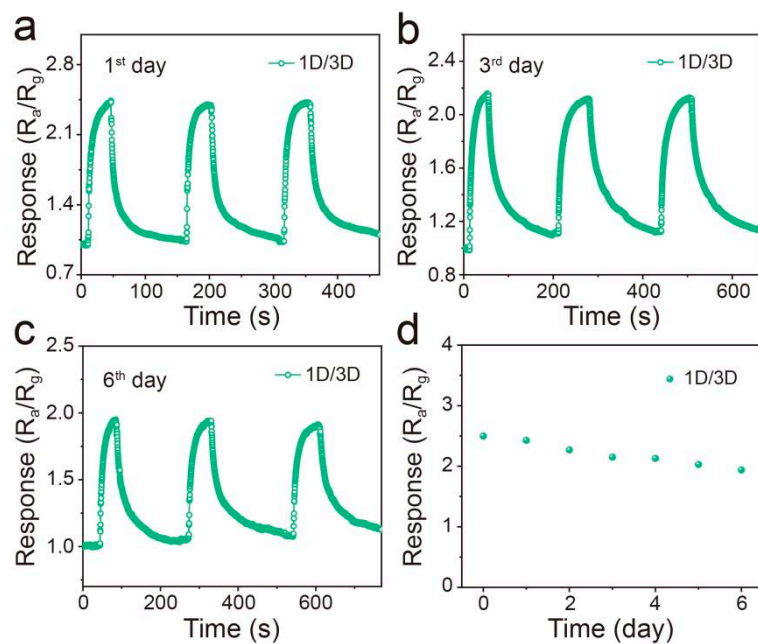


Figure S8. Long-term stability of 1D/3D hybrid-structured PyPbI₃/FACs and 3D FACs perovskite-based sensor toward 10 ppm NO₂ recorded at the 1st (a), 3rd (b) and 6th day (c). (d) The time-dependent response values for 6 successive days in an RH of 70 ± 1% conditions.