

技術內容

Vertical zinc oxide nanorods were synthesized on flexible polyimide (PI) substrate by a low temperature process, aqueous method. The field emission performance of ZnO nanorods can be greatly enhanced by illuminating UV light. It was found that the turn-on electric field can be reduced from 4.3 to 2.0 V/ μm and it is attributed to generate a large number of electrons by UV illumination. Compared with the conventional ZnO film photodetectors, the ZnO nanorods photodetectors have much higher photocurrent. As a result, it is attributed to high surface-to-volume ratio of nanorods, which provide an efficient light trapping absorption.

技術圖片

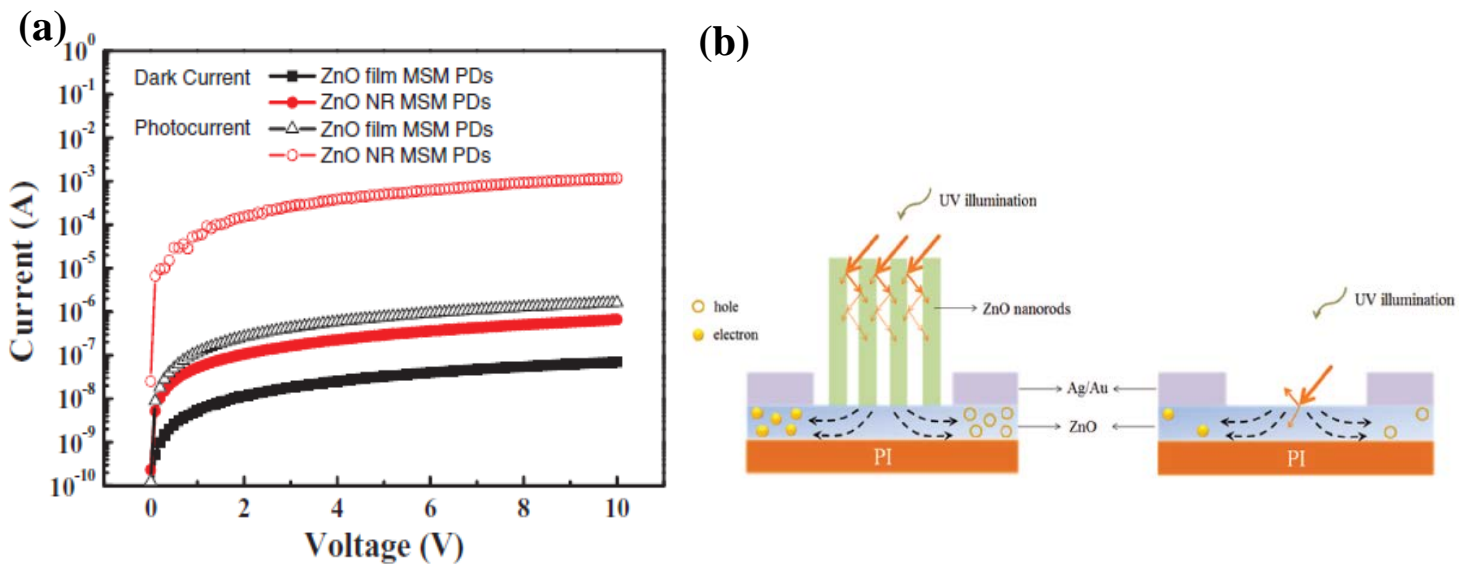


Figure 3. (a) The I-V curves of ZnO film and nanorods photodetectors measured in the dark and under UV illumination. (b) Schematic diagram of light trapping mechanism of nanorods.