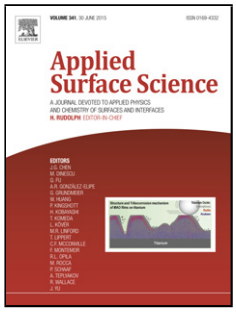

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A study of the effects of aligned vertically growth time on ZnO nanorods deposited for the first time on Teflon substrate

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Highlights

- Synthesis ZnO Nanorods (NRs) by CBD.
- ZnO Nanorods (NRs) deposited on flexible Teflon substrate.
- Control the growth time of ZnO Nanorods (NRs) utilized in the fabrication of photodetector on flexible Teflon substrates.

Abstract

In this study, ZnO nanorods (NRs) were well deposited on Teflon substrates (PTFE) via a chemical bath deposition (CBD) method at low temperature. The consequences of growth time (1h- 4hs) on the structural and optical properties of the aligned ZnO (NRs) were investigated through X-ray diffraction, field-emission scanning electron microscopy (FESEM), and photoluminescence (PL) analyses. The results show that the ZnO (NRs) were preferred to grew aligned along the c-axis as hexagonal wurtzite structure as proved by the sharp and strong ZnO (002) peaks of the ZnO (NRs). Irrespective of the growth continuation,