

Studying the effect of intermediate ferroelectric  
 $Ba_xTi_{1-x}O_3$  layer on the electrical properties of  
ZnO nanorod/ $Cr_yTi_{1-y}O_2$  heterojunction assembly

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Polycrystalline  $Cr_yTi_{1-y}O_2$  and  $Ba_xTi_{1-x}O_3$  thin films were deposited on silicon (Si) and on indium doped tin oxide (ITO) coated glass substrates by spin coating method. Vertically aligned ZnO nanorods were prepared by wet chemical seed-layer growth technique. We report the p-type conductivity in  $Cr_yTi_{1-y}O_2$  thin films ( $y=0.005, 0.05, 0.1, 0.15, 0.2$ ) and variable turn-on voltage ( $V_0$ ) in heterojunction ZnO nanorod/ $Cr_yTi_{1-y}O_2$ /ITO bipolar device.  $Ba_xTi_{1-x}O_3$  thin films ( $x=0.05, 0.1, 0.2, 0.5$ ) was introduced as an intermediate layer between ZnO nanorod and  $Cr_yTi_{1-y}O_2$  layer.  $Ba_xTi_{1-x}O_3$  thin films being ferroelectric, the effect of this layer on the overall electrical performance of the heterojunction ZnO nanorod/  $Ba_xTi_{1-x}O_3$ / $Cr_yTi_{1-y}O_2$ /ITO bipolar devices was studied.