

Study on improving the performance of zinc oxide piezoelectric pressure sensor by doping vanadium

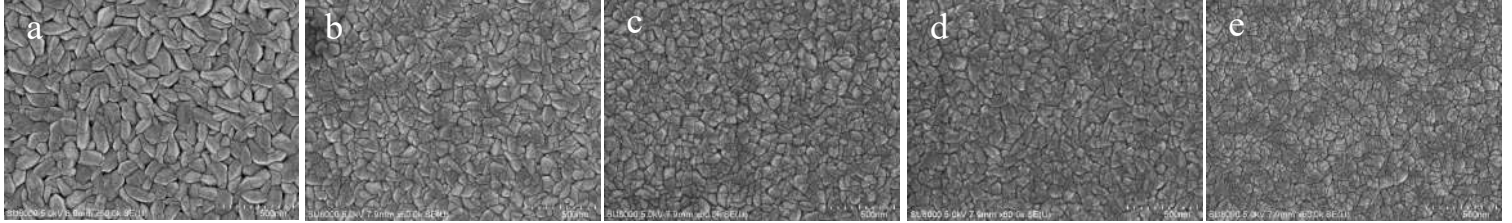


Fig.1 Plan-view images of V doped ZnO with different V_2O_5 working power.(a)0W(b)20W(c)30W(d)40W(e)50W

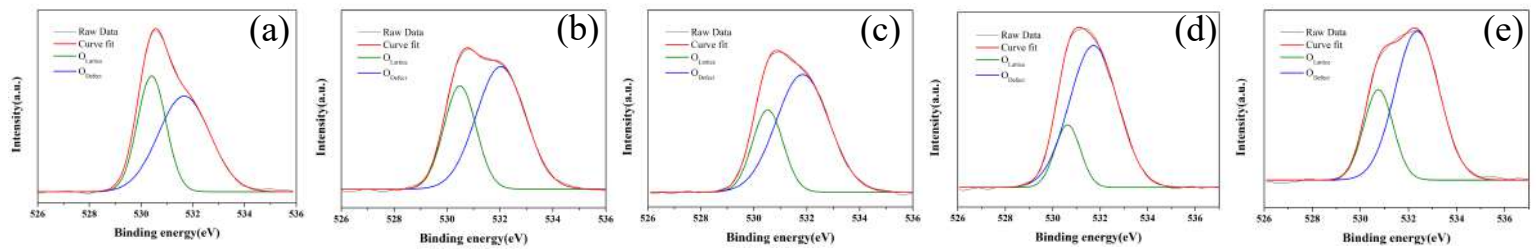


Fig.2 XPS spectra of O1s for V doped ZnO with different V_2O_5 working power.(a)0W(b)20W(c)30W(d)40W(e)50W

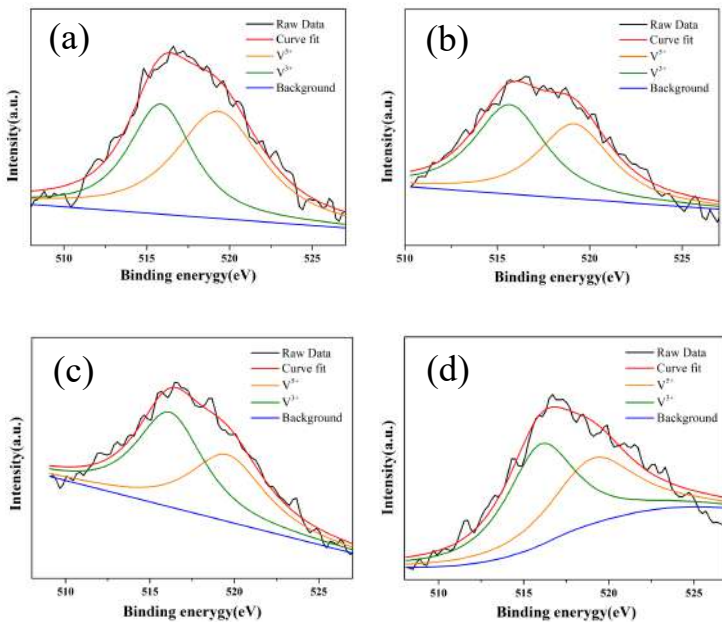


Fig.3 XPS spectra of V2p for V doped ZnO with different V_2O_5 working power. (a)20W(b)30W(c)40W(d)50W

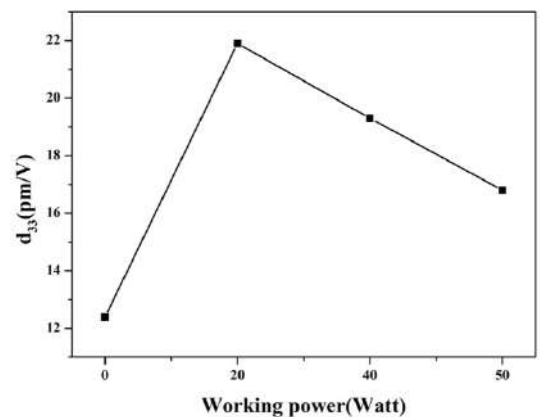


Fig.4 The d_{33} of V doped ZnO with different V_2O_5 working power.

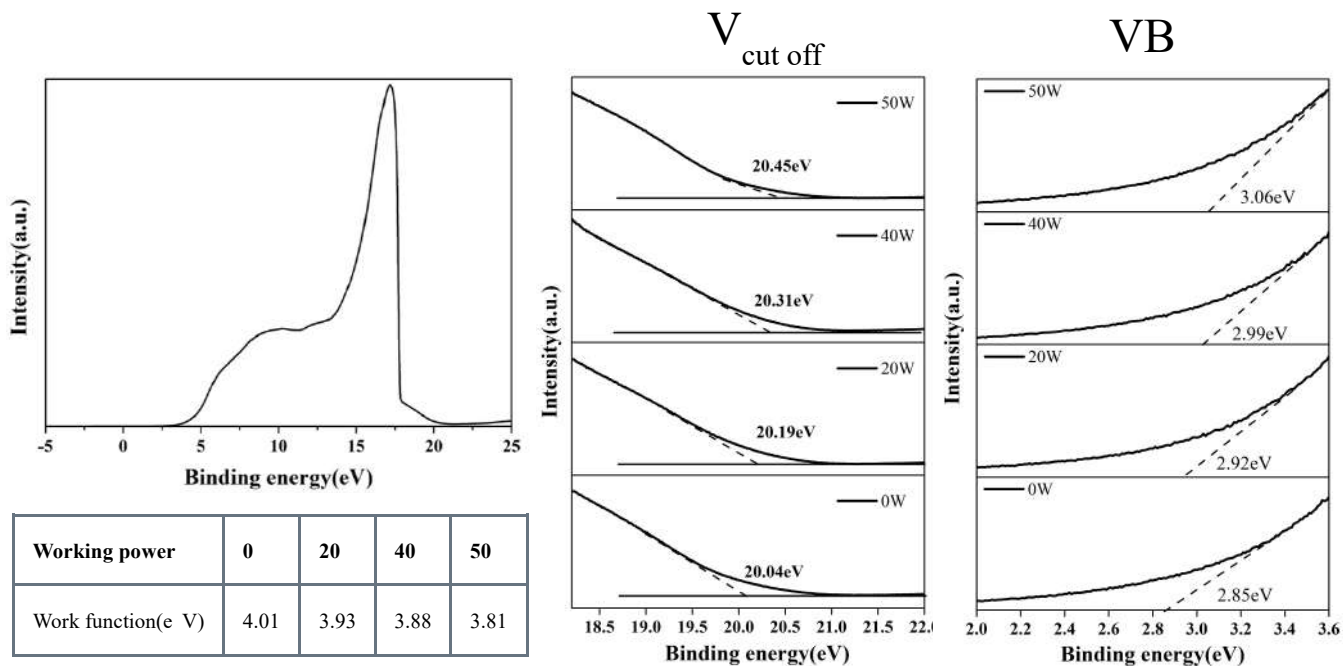


Fig.5 The UPS data of V doped ZnO with different V₂O₅ working power.

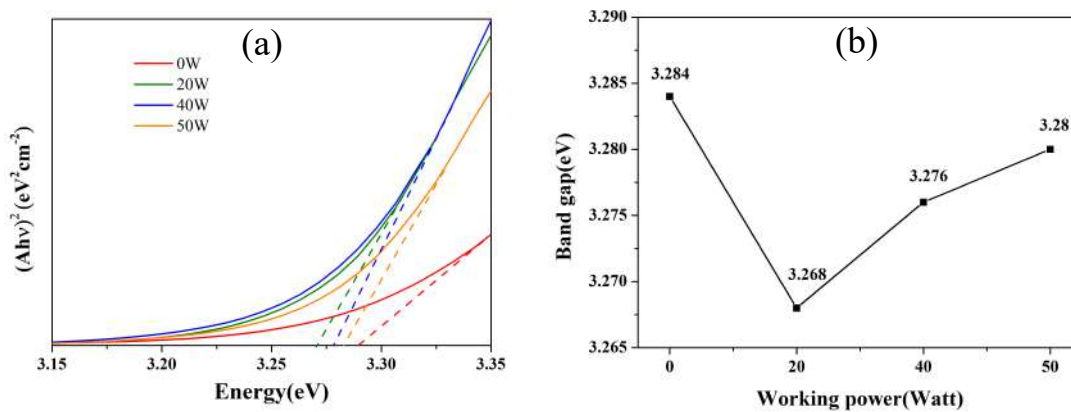


Fig.6 (a)The $(ah\nu)^2$ photon energy pattern of V doped ZnO with different V₂O₅ working power. (b)band gap energy of V doped ZnO with different V₂O₅ working power.

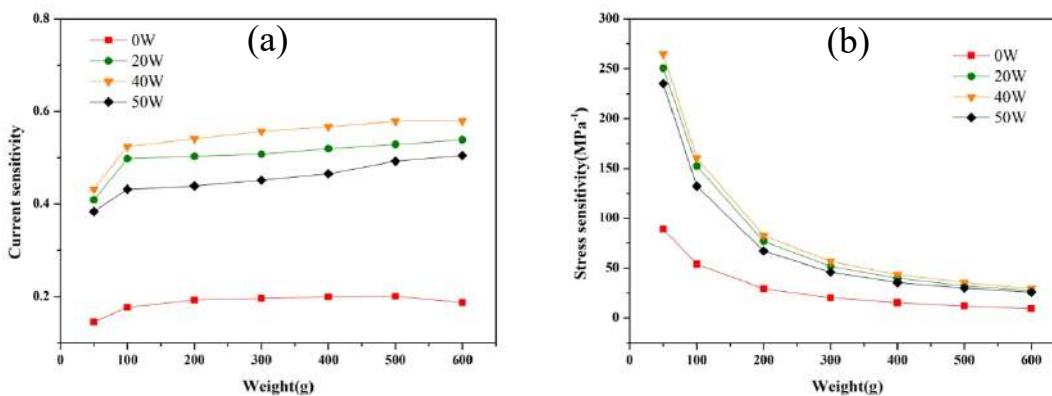


Fig.7 Sensor performance of V doped ZnO with different V₂O₅ working power. (a)current sensitivity (b)stress sensitivity