

**SURFACE MORPHOLOGY CHARACTERISTICS OF TITANIUM OXIDE THIN
FILMS PREPARED BY SPIN COATING OF SOL-GEL METHOD**

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ABSTRACT

SURFACE MORPHOLOGY CHARACTERISTICS OF TITANIUM DIOXIDE THIN FILMS PREPARED BY SPIN COATING OF SOL GEL METHOD

Titanium dioxide (TiO_2) thin films were prepared through hydrolysis and condensation of titanium (IV) isopropoxide, 2-propanol, acetic acid, triton X-100 and deionised water. From this solution it will form into colloidal solution. This is known as sol-gel method and the solution was deposited into silicon substrate using spin coating technique. Sol- gel process is a convenience and inexpensive technique for the production of oxide films of a variety of metals. Spin coating is widely and simple technique which is widely used for producing a very thin organic films. To form titanium dioxide thin films the solution was dropped and dried repeated for 5 times, to get a certain thickness of thin films. The substrate were anneal at 400°C and 500°C to produce a crystalline structure of TiO_2 . The surface morphology characteristics of TiO_2 thin films was observed using Scanning Electron Microscope (SEM). From SEM, the result showed that the grain boundary of TiO_2 thin films was affected by annealing temperature.