

**ANODIZATION OF TITANIA NANOTUBE  
ARRAYS IN ELECTROLYTE CONTAINING  
HYDROGEN PEROXIDE**

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**ANODIZATION OF TITANIA NANOTUBE ARRAYS IN ELECTROLYTE  
CONTAINING HYDROGEN PEROXIDE**

by

**LEE KAR CHUN**

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requirements for the degree of  
Master of Science**

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## DECLARATION

I hereby declare that I have conducted, completed the research work and written the dissertation entitled “Morphological Investigation on Anodized Titania Nanotube Array in Electrolyte Containing H<sub>2</sub>O<sub>2</sub> and Qualitative Studies on Post-Anodized Electrolyte Waste”. I also declare that it has not been previously submitted for the award of any degrees or diploma or other similar title of this for any other examining body or university.

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## LIST OF SYMBOLS

$2\theta$	Two-theta
Ag/AgCl	Silver-silver Chloride reference electrode
Cu K $\alpha$	Copper K-alpha X-ray source
e <sup>-</sup>	electron
h <sup>+</sup>	holes
h $\nu$	Photon energy
H <sub>2</sub>	Hydrogen gas
HF	Hydrofluoric acid
H <sub>2</sub> O	Water
H <sub>2</sub> O <sub>2</sub>	Hydrogen peroxide
KBr	Potassium bromide
MO	Methyl Orange dye
NH <sub>4</sub> F	Ammonium fluoride
(NH <sub>4</sub> )TiOF <sub>3</sub>	Ammonium titanate oxytrifluoride
(NH <sub>4</sub> ) <sub>3</sub> TiOF <sub>5</sub>	Triammonium oxotitanate pentafluoride
(NH <sub>4</sub> ) <sub>2</sub> TiF <sub>6</sub>	Diammonium Hexafluorotitanium
O <sup>16</sup>	Oxygen 16 isotope
O <sup>18</sup>	Oxygen 18 isotope
OH <sup>-</sup>	Hydroxyl group
•OH	Hydroxyl radical
Pt	Platinum
Ti <sup>4+</sup>	Titanium 4+ cation
TiF <sub>4</sub>	Titanium tetrafluoride
TiO <sub>2</sub>	Titanium Dioxide
Xe <sup>125</sup>	Xenon 125 isotope