

**Effect of Different UV Light Intensity on Porous Silicon Fabricated by Using Alternating Current photo-assisted Electrochemical Etching (ACPEC) Technique**

Siti Nurfarhana Sohimee<sup>1, a \*</sup>, Zainuriah Hassan<sup>1, b</sup>, Naser Mahmoud Ahmed<sup>2, c</sup>, Lim Way Foong<sup>1, d</sup>, Quah Hock Jin<sup>1, e</sup>

<sup>1</sup>Institute of Nano Optoelectronics Research and Technology (INOR), Universiti Sains Malaysia, 11800 USM, Penang, Malaysia

<sup>2</sup>School of Physics, Universiti Sains Malaysia, 11800 USM, Penang, Malaysia

<sup>a</sup>farhanasohimee@gmail.com, <sup>b</sup>zai@usm.my, <sup>c</sup>naser@usm.my,  
<sup>d</sup>wayfoong317@yahoo.com.sg, <sup>e</sup>jinquah1st@hotmail.com

Alternating current photo-assisted electrochemical etching (ACPEC) process was used to produce the formation of porous silicon with different ultra-violet(UV) light intensity. The study aims to investigate the effect of different UV light illumination on the properties of porous silicon. The surface of n-type silicon (111) was selectively etched in the HF and ethanol solution with ratio (5:20) for 30 minutes under different UV lamp intensity; 40%, 50% and 60%. The samples were characterized by using field emission scanning electron microscope (FESEM), atomic force microscopy (AFM) and high resolution X-ray diffraction (HR-XRD).

**Keywords:** Alternating current photo-assisted electrochemical etching (ACPEC), Ultra-violet (UV), FESEM, AFM, HR-XRD.