

## **Porous Silicon Visible Light Photodetector**

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### **ABSTRACT**

In this research, we present the study on the application of porous silicon for optoelectronic device which called porous silicon photodetector in this paper. This device was fabricated on porous silicon layer which was formed by electrochemical etching of silicon wafer in hydrofluoric acid solution under various anodization condition such as the resistivity of silicon wafer, current density, concentration of hydrofluoric acid solution and anodization time. The experiment will study on photoresponse and responsetime of porous silicon photodetector which was fabricated on various porosity of porous silicon layer. It is found that when devices fabricated on higher porosity porous silicon layer, the photoresponse of device will expand toward the short-wavelength and bandwidth of spectrum response will cover visible light. In addition, it is found that responsetime of device increases.

**Keywords:** porous silicon, porous silicon photodetector, anodization