Study on laterally-formed pores in anodic alumina nanotemplate

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There has been growing interest in the microfabrication of structures with nano-sized dimensions. Among various approaches for fabrication of nanostructures, anodic alumina nanotemplate (AAN) has been drawing much attention due to well organized and high aspect ratio pore structure. There have been numerous reports for the fabrication of AAN and its applications. However, few reports for the lateral porous structures with AAN have been found. For the specific applications such as nano-relays, field effect transistors, sensors and so on, lateral growth of nanostructures is highly desirable. In this experiment, lateral AANs are formed by using the fracture of oxide-Al-oxide (SiO2/Al/SiO2) structures for the applications of specific nanoelectronics. Characteristics on layer, depth and diameters of lateral pores in AAN are also presented. This lateral structure of AAN could be applied to nanoelectronic devices with some modifications.