

MANUFACTURING METHOD OF SMOOTHING A SEMICONDUCTOR SURFACE**Abstract**

A method is provided for preparing semiconductor structure, e.g., a semiconductor on insulator structure, comprising a device layer having a smooth surface. The method provided involves smoothing a semiconductor substrate surface by making use of stress enhanced surface diffusion at elevated temperatures. The purpose of this method is to reach atomic scale surface smoothness (for example, smoothness in the range of between 1.0 and 1.5 angstroms as measured according to root mean square over a 30um X 30um AFM measurement), which is required in advanced (sub 28 nm) CMOS device fabrication.

FIGURE 2