ABSTRACT

SILICON-ON-INSULATOR ULSI DEVICES WITH MULTIPLE SILICON FILM THICKNESSES

A method of forming a multiple-thickness semiconductor-on-insulator, comprising the following steps. A wafer is provided comprising a semiconductor film (having at least two regions) overlying a buried insulator layer overlying a substrate. The semiconductor film within one of the at least two regions is masked to provide at least one semiconductor film masked portion having a first thickness, leaving exposed the semiconductor film within at least one of the at least two regions to provide at least one semiconductor film exposed portion having the first thickness. In one embodiment, at least a portion of the at least one exposed semiconductor film portion is oxidized to provide at least one partially oxidized, exposed semiconductor film portion. Then the oxidized portion of the exposed semiconductor film is removed to leave a portion of the semiconductor film having a second thickness less than the first thickness.

(FIG. 1)