

Abstract

BORON ION IMPLANTATION USING ALTERNATIVE FLUORINATED BORON PRECURSORS, AND FORMATION OF LARGE BORON HYDRIDES FOR IMPLANTATION

Methods of implanting boron-containing ions using fluorinated boron-containing dopant species that are more readily cleaved than boron trifluoride. A method of manufacturing a semiconductor device including implanting boron-containing ions using fluorinated boron-containing dopant species that are more readily cleaved than boron trifluoride. Also disclosed are a system for supplying a boron hydride precursor, and methods of forming a boron hydride precursor and methods for supplying a boron hydride precursor. In one implementation of the invention, the boron hydride precursors are generated for cluster boron implantation, for manufacturing semiconductor products such as integrated circuitry.

Figure 1