

ABSTRACT

SCANNING ENERGY IMPLANTATION

A process is described for generating, through ion implantation, any desired concentration profile. This is accomplished by providing a set of mono-energetic doping concentration profiles which, when superimposed, generate the desired concentration profile (in a manner analogous to generating a square wave by superimposing multiple sine waves). The ion current, accelerating voltage, and dose needed to generate each member of the set is then computed and fed as input to software that controls the operation of the implanter. The various profiles from the set are then implemented while the ion beam remains stationary, thereby generating the desired profile at that spot. The beam is then moved to the next intended location and the process is repeated. In an alternative embodiment, each profile in the set is implemented over the entire surface scanned by the beam and then the process is successively repeated for the remaining members of the set.

(FIGURE 4 IS SUGGESTED FOR PUBLICATION)