APPARATUS AND METHOD OF TEMPERATURE CONTROL DURING CLEAVING PROCESSES OF THICK FILM MATERIALS

ABSTRACT OF THE DISCLOSURE

An apparatus for temperature control of manufacture of thick film materials includes a stage comprising a planar surface for supporting a bulk material to be implanted and subsequently cleaved. The bulk material has a surface region, a side region, and a bottom region which provides a volume of material and defines a length between the bottom region and the surface region. The apparatus further includes a mechanical clamp device adapted to engage the bottom region to the planar surface of the stage such that the bulk material is in physical contact with the planar surface for thermal energy to transfer through an interface region between the bulk material and the stage while the surface region is substantially exposed. Additionally, the apparatus includes a sensor device configured to measure a temperature value of the surface region and generate an input data. The apparatus further includes an implant device configured to perform implantation of a plurality of particles through one or more portions of the surface region of the bulk material and a controller configured to receive and process the input data to increase and/or decrease the temperature value of the surface region through at least the interface region between the planar surface of the stage and the bottom region of the bulk material.

Figure 1