

## **An inelastic thermal spike model to calculate ion induced desorption yields**

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*Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, Volume 267 Issue 6 (March 2009) 885-890*

Ion induced desorption is a severe luminosity limitation for low charge state heavy ion accelerators. Therefore, it was intensively investigated in dedicated experiments during recent years. Several experimental results were obtained providing numerous desorption yields for different ion beam parameters and different materials as well as surface treatments. The heavy ion induced desorption was identified as a pure surface cleaning effect. Nevertheless it was shown that the yields have a strong link to the irradiated material. The initial desorption yield decreases during the irradiation reaching a dynamic equilibrium. Desorption yields of several hundred molecules per incident ion from one monolayer adsorbed gas can not be explained with the geometrical cross section of the projectile. Therefore we have expanded the inelastic thermal spike model to describe the process as thermal desorption from a microscopic heated region. The obtained results of this extended model represent very well the numbers from many experimental studies.