

Ion implantation into stainless steel - Depth selective phase analysis with an improved Mössbauer technique

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The main point of interest is to study the dynamic evolution of the depth profile of implanted ions. Basically this is determined by the mean projected range of the implanted ions, by sputtering of surface atoms and by radiation induced mixing effects. The quantities describing these processes change dynamically as function of the implanted ion dose with changing composition in the implanted depth region. To analyze the influence of phase composition **Depth Selective Conversion Electron Mössbauer Spectroscopy (DCEMS)** is applied. The system under investigation is ^{151}Eu implanted in high-austenitic stainless steel of composition $\text{Fe}_{62}\text{Ni}_{20}\text{Cr}_{18}$.