

Influence of ion implantation on the oxidation of nickel and stainless steel.

University of Salford - Improved high temperature oxidation behaviour of alloys by ion implantation



Description: -
-influence of ion implantation on the oxidation of nickel and stainless steel.
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Communication and social order
M & C tui li jie zuo
Aileli Kunen zuo pin xi lie -- 11
M & C t'ui li chieh tso
D47452/83influence of ion implantation on the oxidation of nickel and stainless steel.
Notes: PhD thesis, Electrical Engineering.
This edition was published in 1982



Filesize: 38.79 MB

Tags: #The #influence #of #Y #ion #implantation #on #the #oxidation #behaviour #of #ZrN #coating

The influence of Y ion implantation on the oxidation behaviour of ZrN coating

The continued effectiveness of such approaches, namely by cerium and yttrium ion implantation and with a vapor deposited amorphous silica coating, in reducing oxidation of 20Cr-25Ni-Nb stainless steel in a carbon-dioxide-based environment has been examined during 0. The mechanism of growth is discussed in terms of classical internal-oxidation theories, and an alternative explanation based on an available-space theory is developed. The internal oxidation rates in a number of different alloys are compared with diffusivities of metals in the base alloy.

High temperature corrosion protection of austenitic AISI 304 stainless steel by Si, Mo and Ce ion implantation

AFM results showed that by increasing N + fluence surface of the sample becomes smoother that may be the result of heat accumulation during implantation causing higher rate of diffusion in the sample. The effects were opposite in the two target materials chosen: tentative explanations are proposed.

Improved high temperature oxidation behaviour of alloys by ion implantation

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The influence of Y ion implantation on the oxidation behaviour of ZrN coating

Deformation-induced martensitic transformation with increasing nickel content i.

Influence of ion implantation on the microstructure of oxide scales formed on a 20Cr/25Ni/Nb

. Yttrium implantation can greatly improve the oxidation resistance of the ZrN coating.

The Influence of Ion Implantation Upon the High Temperature Oxidation of Titanium and Stainless Steel

The Influence of Amorphization by Ion Implantation on the Superconducting and Normal Conducting Properties of Evaporated Molybdenum Layers Blistering and Exfoliation on Gold by 1-3. The lanthanum concentrates in this region and appears to act as a marker due to its low diffusivity. The initial deformed microstructure undergoes recrystallisation via a strain-induced boundary migration mechanism, attaining a fully recrystallised microstructure after 120 s of annealing.

Influence of ion implantation on the microstructure of oxide scales formed on a 20Cr/25Ni/Nb

However, the accommodation of the scale and underlying metal to the strain caused by impact varied for different concentrations of yttrium in Ni-20Cr-12Al.

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