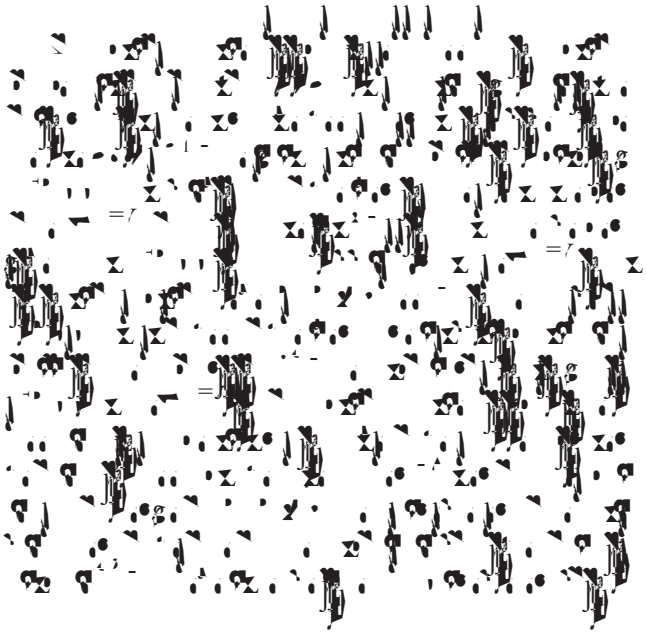
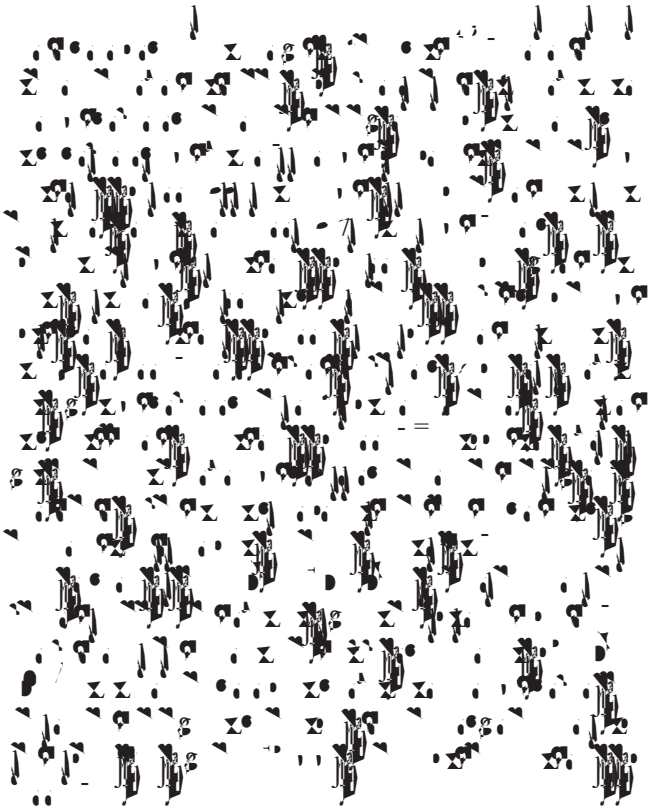
Quantitative Analysis of the Cr-depleted Layer in the Heat Affected Zone

Intergranular stress corrosion cracking (IGSCC) has been observed in the heat affected zone (HAZ) of low carbon martensitic stainless steel. In this study, the authors assessed Cr-depleted zones at the grain boundaries by a STEM-EDX analysis and determined the morphology by deconvolution of the STEM-EDX results. Findings of the authors indicate that Cr-depleted zones of only a few nanometers in width are sufficient to cause IGSCC at the HAZ of low carbon martensitic stainless steel under certain circumstances.

1. I d

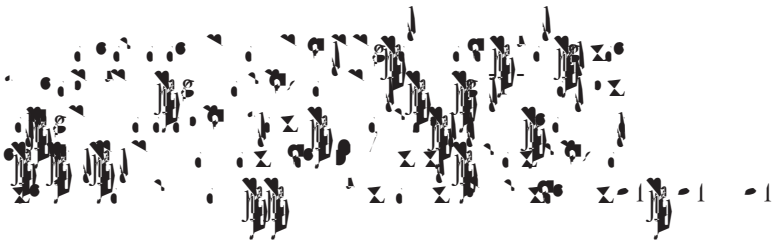


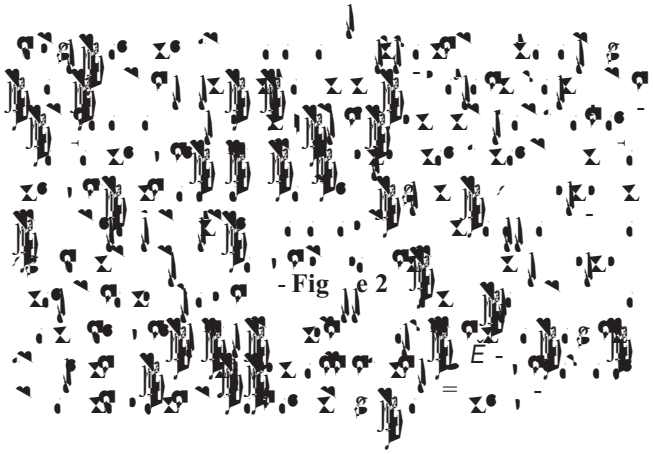


2. E e i e a P ced e

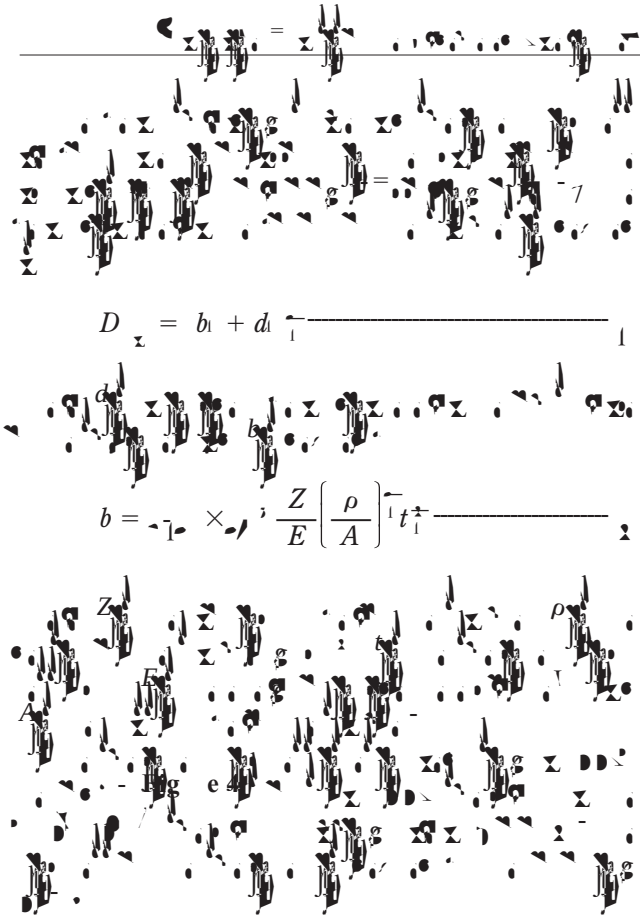
Tab e 1

3.3. Q a l l a i e E l i a j i ~
f l h e C De e d ed Z ~ e





- Fig e 2



tions. A summary of the distribution morphologies is shown in Table 3.)