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Steinless Steel and Steel Platel

Development of Ti-bearing High Performance Ferritic Stainless Steels R430XT and RSX-1

Yoshihiro Yazawa, Yasushi Kato, Makoto Kobayashi

Synopsis :
In order to develop high performance ferritic stainless steels which would exceed conventional high purity ones, the effects of alloying elements and production processes on the properties of the steels were investigated. The investigation results revealed that reduction of carbon to the utmost level and the adjustment of nitrogen content to remain at a proper level provided the steels with both high r-value and a good ridging property when Ti was added as a stabilizer. Further, the addition of Mo was especially effective in improving corrosion resistance of the steel under cyclic corrosive condition such as an exposure in the field. Based on the above results and by extensively optimizing the production processes, Ti-b earing high performance ferritic stainless steels, "River Lite 430XT (ultra low C, low N- 16%Cr-Ti) and River Lite SX-1 (ultra low C, low N-18%Cr-1.5%Mo-Ti)", have been developed.

The body can be viewed from the next page.

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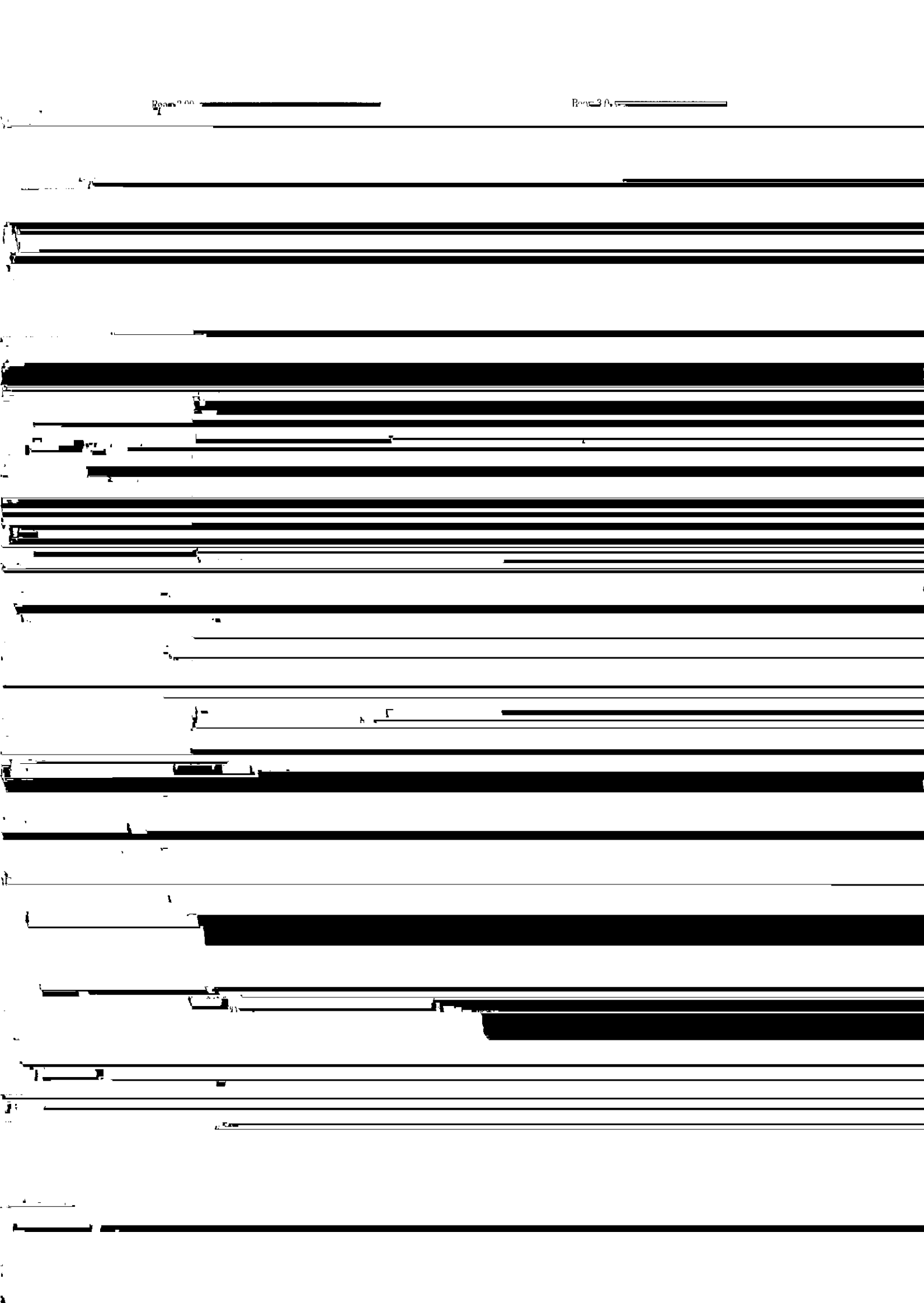
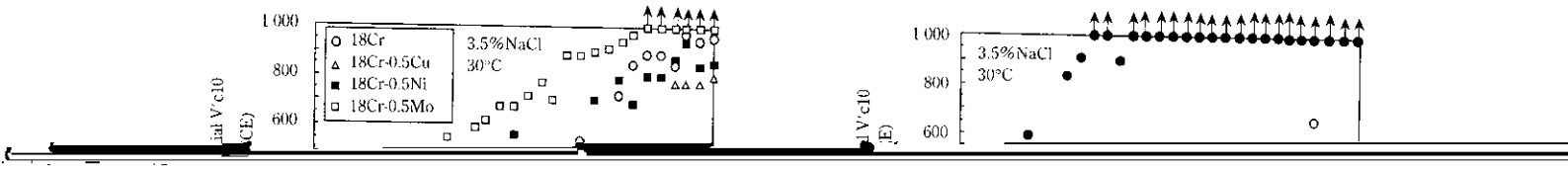
the present work, the most appropriate alloy composition was investigated[2-9] with the aims of improving corrosion resistance under an exposure in the field, which is the

When the aim is to develop a stainless steel with high general applicability, corrosion resistance in a neutral




1 000
800
600
18Cr
18Cr-0.5Cu
18Cr-0.5Ni
18Cr-0.5Mo
3.5%NaCl
30°C
1 000
800
600
3.5%NaCl
30°C

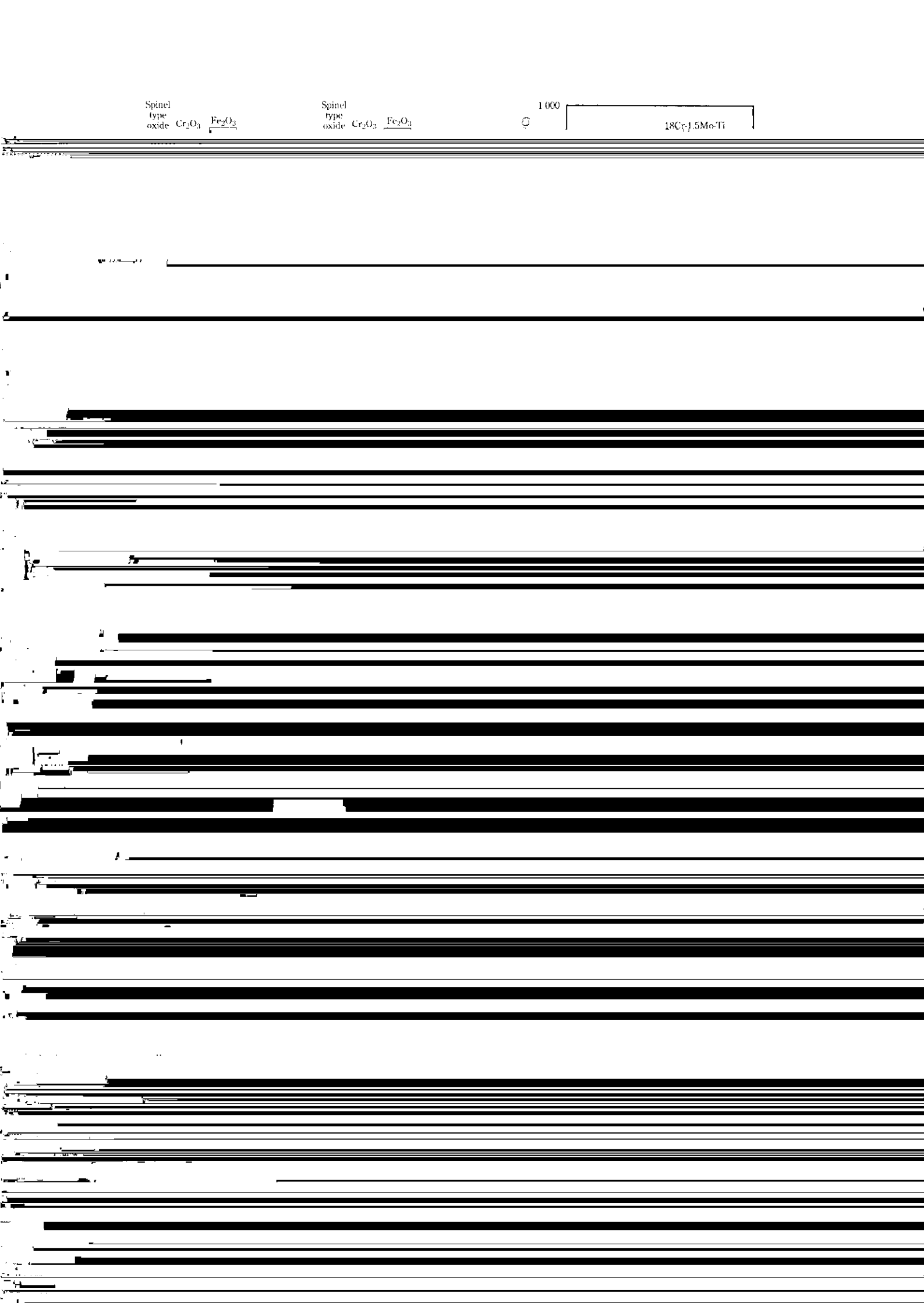

Spinel type oxide
Cr_2O_3
Fe_2O_3
Spinel type oxide
Cr_2O_3
Fe_2O_3
1 000
18Cr-1.5Mo-Ti

Table 2 Chemical compositions of R430XT and RSX-1

Table 3 Mechanical properties of R430XT and RSX-1

Table 5 Pitting potential of R430XT and RSX-1 in 3.5%NaCl solution at 35°C