

Table captions

Table 1 Parabolic oxidation rate constants for the Fe–25Ni–15Cr superalloy at 650 °C.

Table 2 Electrochemical parameters obtained by potentiodynamic polarization curves.

Table 3 Fitted results of EIS data.

Table 1 Parabolic oxidation rate constants for the Fe–25Ni–15Cr superalloy at 650 °C.

Samples	k_w ($10^{-6} \text{ mg}^2\text{cm}^{-4}\text{h}^{-1}$)
As-Received	8.94 ± 2.08
Exposed (0 h–60 h)	825 ± 10.2
Exposed (60 h–300 h)	72.5 ± 20.8

Table 2 Electrochemical parameters obtained by potentiodynamic polarization curves.

Samples	E_{corr}/V	$i_{corr}/\mu A.cm^{-2}$	E_b/V	$i_{pass}/\mu A.cm^{-2}$
As-received	-0.15±0.01	0.15±0.06	0.48±0.04	0.78±0.25
Exposed	-0.16±0.02	0.52±0.08	0.37±0.02	7.47±0.56
Received- Oxidation	-0.22±0.01	0.35±0.02	-	-
Exposed- Oxidation	-0.31±0.01	6.22±0.97	-	-

Table 3 Fitted results of EIS data.

Samples	$R_s (\Omega \cdot \text{cm}^2)$	$R_1 (\text{k}\Omega \cdot \text{cm}^2)$	CPE_1 $(\mu\text{F} \cdot \text{cm}^{-2} \cdot \text{s}^{n-1})$	n_1	$R_2 (\text{k}\Omega \cdot \text{cm}^2)$	CPE_2 $(\mu\text{F} \cdot \text{cm}^{-2} \cdot \text{s}^{n-1})$	n_2	R_p $(\text{k}\Omega \cdot \text{cm}^2)$
As-received	4.29±0.17	92.90±1.20	51.0±0.8	0.94±0.04	37.52±1.20	147.7±1.20	0.90±0.02	130.42
Exposed	6.29±0.12	2.60±0.13	204.7±9.1	0.74±0.03	64.60±2.4	16.7±0.8	0.90±0.01	67.2
Received- Oxidation	5.66±0.37	0.03±0.01	19.7±2.2	0.78±0.01	80.83±8.4	61.4±4.2	0.88±0.02	80.86
Exposed- Oxidation	4.30±0.06	0.26±0.01	38.8±2.5	0.55±0.01	2.94±0.07	113.4±9.3	0.74±0.03	3.2