

In air ferritic stainless steels show comparable behaviour except for mass changes, which were up to 40 mg/cm² AISI 430 and ± 1.5 mg/cm² for the other steels. These data are in agreement with literature data where

available. Negative mass changes are normally associated with chromia and CrO(OH)₂ evaporation, but this does not immediately correlate with either the chromium content or with the ECr values (Table 1).

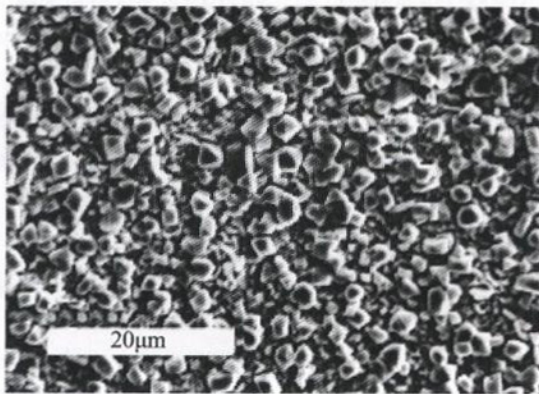
Table 1

Alloys chemical composition, % wt.

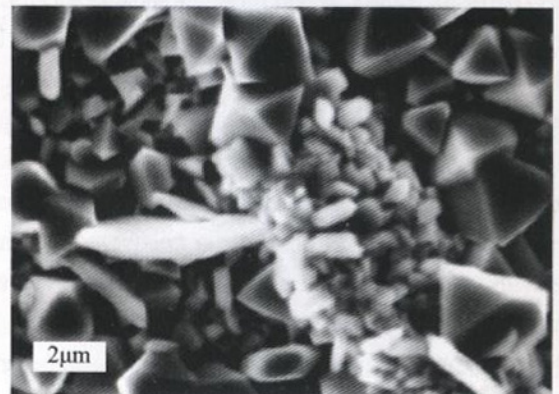
	Cr	Ti	Zr	La	Mn	Mo	Si	Y	ECr
430	16.5				1.0		1.0		18.0
ITM14	26.85	0.3			0.4	2.3	0.03	0.2	29.2
ZMG232	22.1		0.22	0.044	0.5		0.4		22.7
Crofer 22APU	22	0.08		0.08	0.4		0.11		22.2

The surface morphology of AISI 430 (800°C, 170 h) is shown in Fig. 2. It is covered by a uniform layer of octahedral crystals (Figure. 2 a) with hexagonal wafers

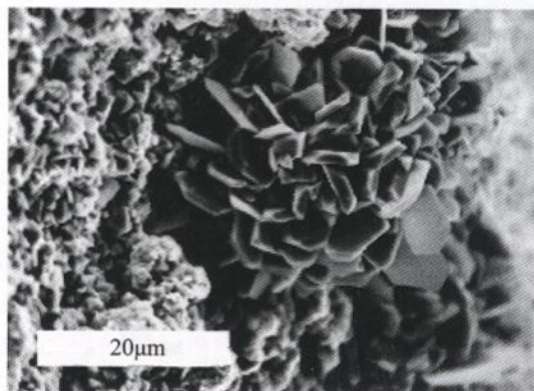
("chips") in some places; they are nearly perpendicular to the surface (Fig. 2 b) and are concentrated in relatively narrow areas (Fig. 2 c).



a



b



c

Fig. 2. Surface morphology of steel 430 after oxidation in air (800°C, 170 h) for there different places (a-c).