KAWASAKI STEEL TECHNICAL REPORT
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Recent Technical Progress in Analysis and Material Evaluation at Kawasaki Steel*

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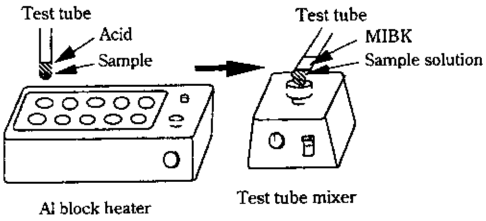
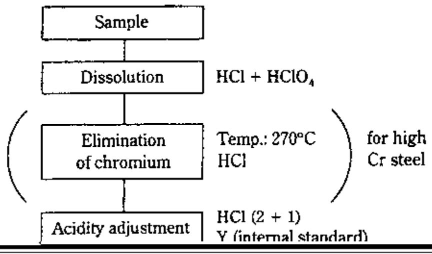
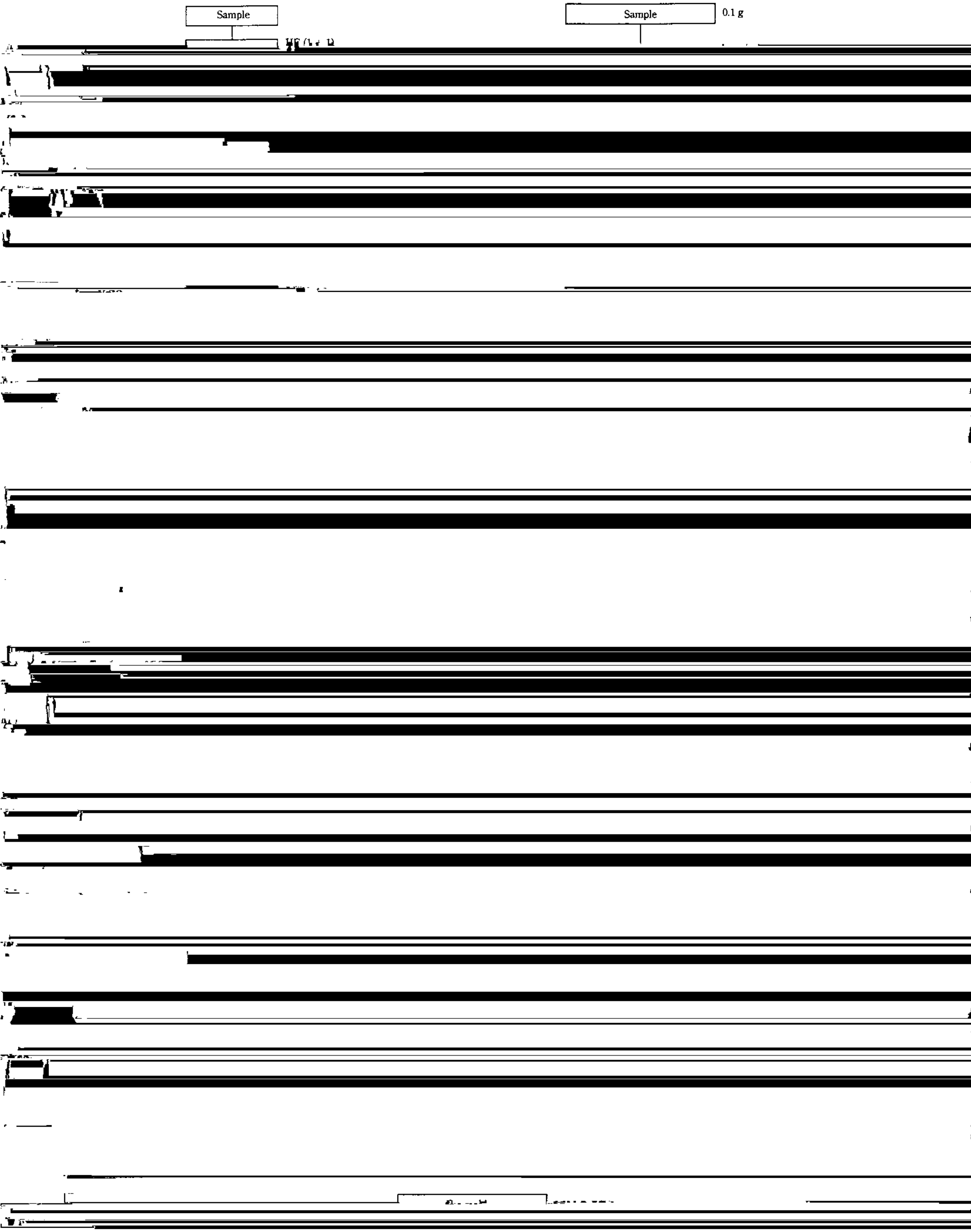
Synopsis:

This article reviews the recent technical progress in chemical analysis, process control analysis, surface analysis and microscopic characterization in Kawasaki Steel. The analytical methods, such as the highly accurate ultratrace analysis for steels and silicon materials and the spark discharge optical emission spectroscopy for gaseous constituents and inclusions in steels, have been developed in order to meet the requirements from the material developments and manufacturing process.


Test tube
Acid
Sample
Test tube
MIBK
Sample solution
Al block heater
Test tube mixer


Sample
Dissolution
HCl + HClO$_4$
Elimination of chromium
Temp.: 270°C
HCl
for high Cr steel
Acidity adjustment
HCl (2 + 1)
Y (internal standard)


Sample
Sample
0.1 g

preparation method, with as little contamination as pos-

the pourpose of high formability. In order to reduce the

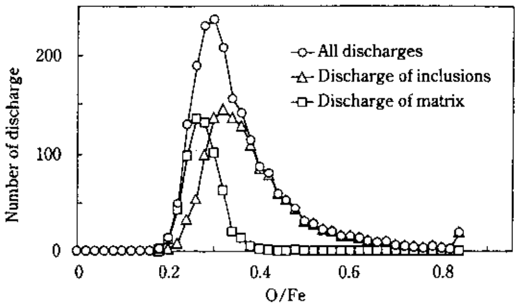
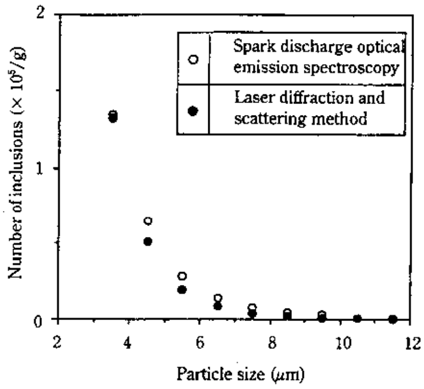


Fig. 6 Frequency distribution curves of O/Fe



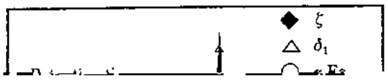
[redacted]

partially put into practical use.

On the other hand, concerning the analysis of the concentration of O, chemical composition and particle size distribution of inclusions, which substantially affect the

the discharges to the oxides. On the other hand, the O/Fe in the discharges showing no anomalous emission is made rapidly by the optical emission spectroscopy [illegible]

refinement of the analyzing area, a resolution of 10 μm was obtained in chemical state mapping. It is widely


ζ
δ_1

[illegible]

12) Y. [illegible] and T. Matsumura: *CAMP-ISIJ* 4(1991), 282