

FIG. 1

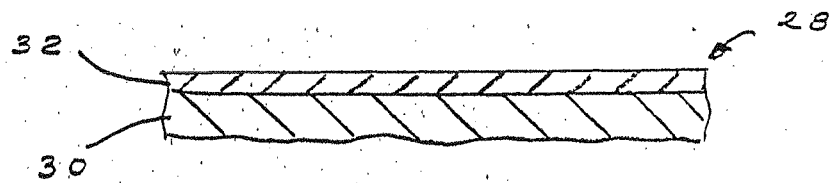


FIG. 2A

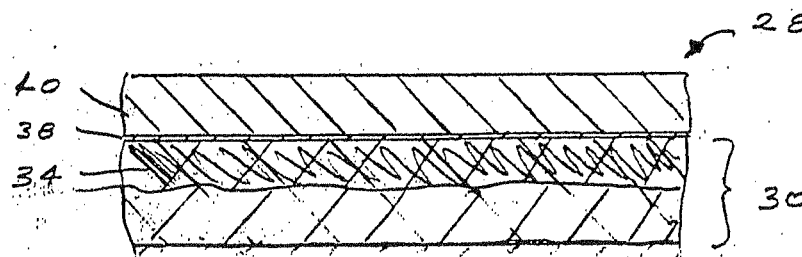


FIG. 2B

Portion of 1100° C Ni-Al-Pt Phase Diagram

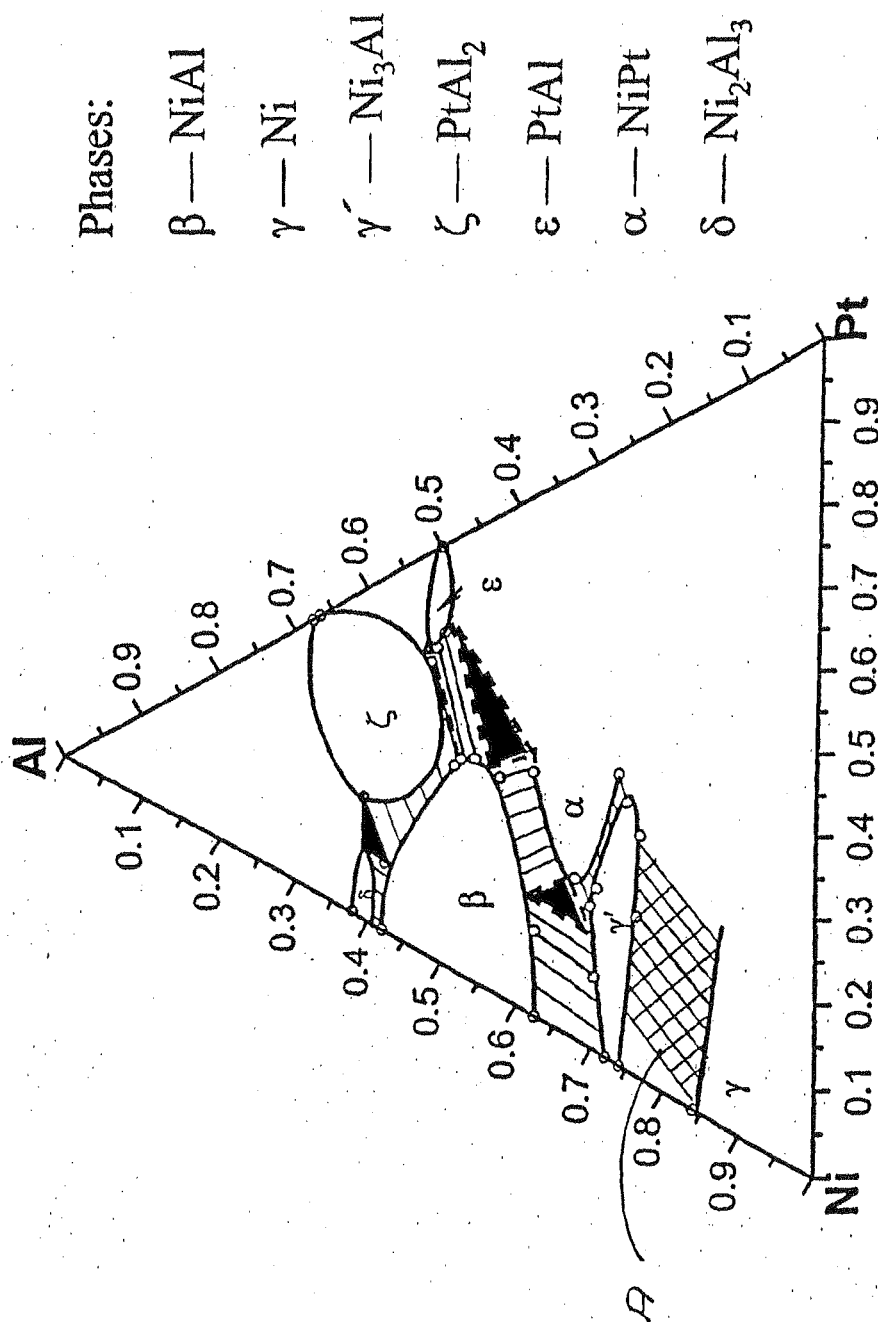


FIG. 3

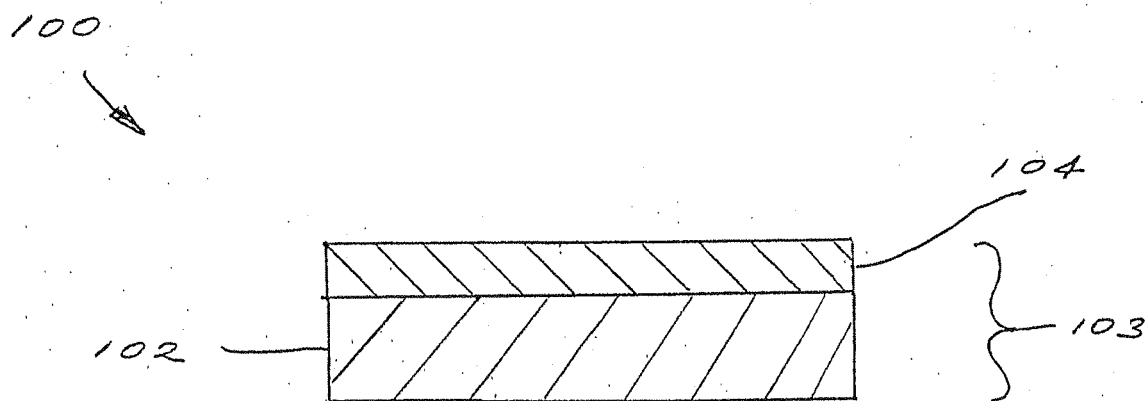


FIG. 4

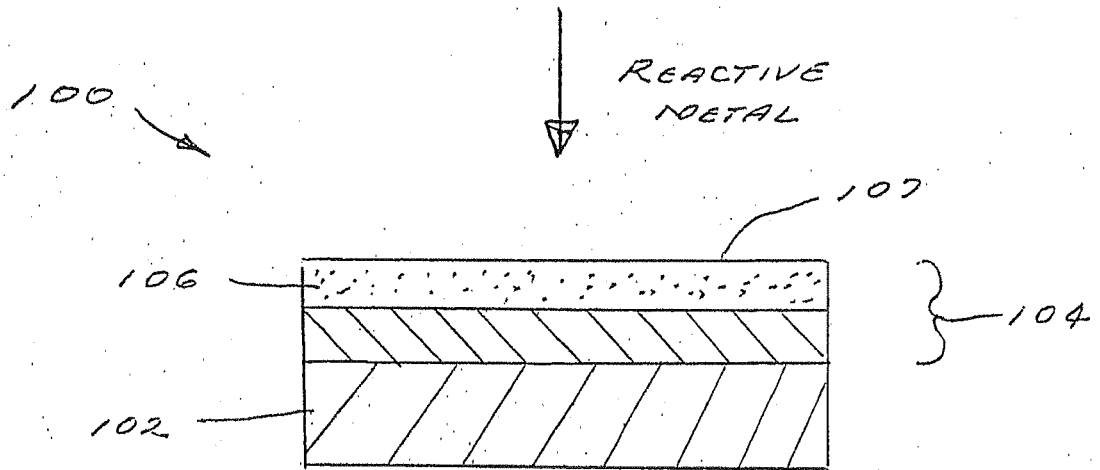
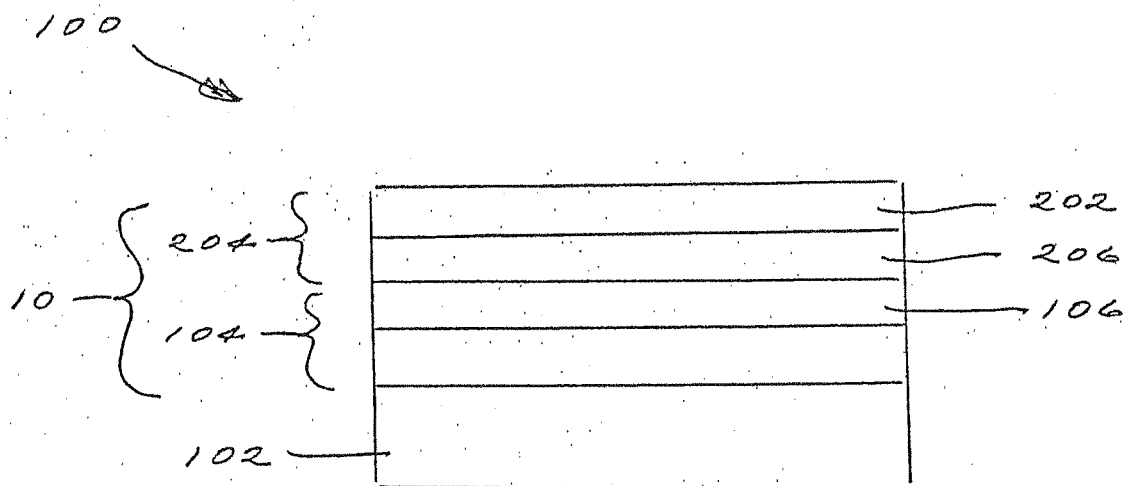
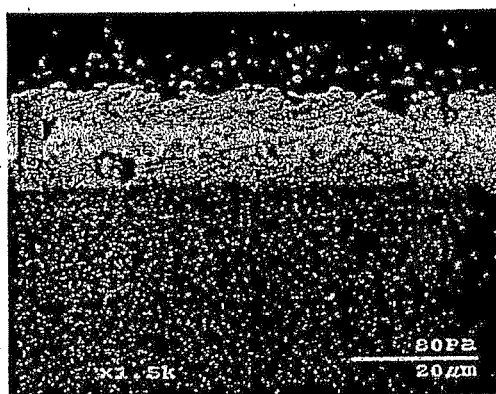


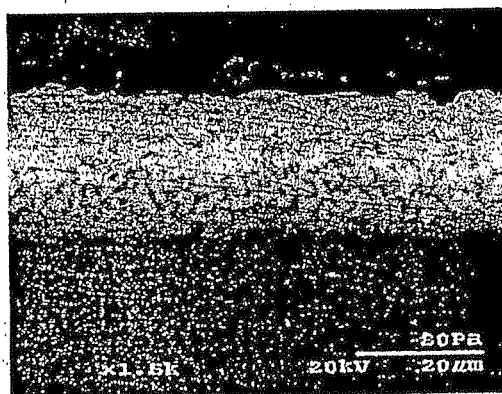
FIG. 5

FIG. 6



(a) ~2 μ m electrodeposited Pt layer

FIG. 2A



(b) ~7 μ m electrodeposited Pt layer

FIG. 2B

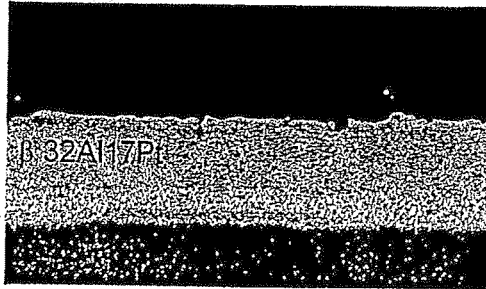


FIG. 8A

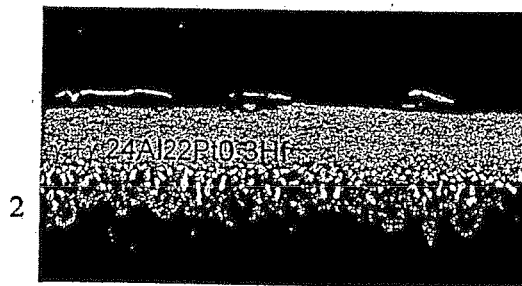


FIG. 8B

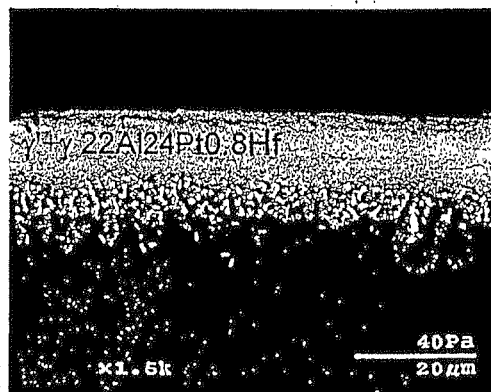
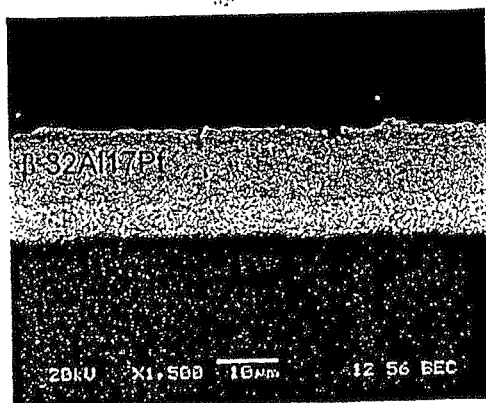
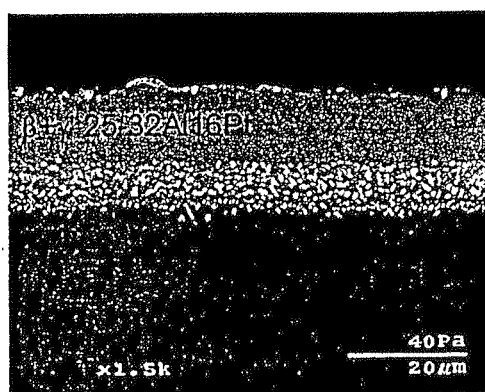


FIG. 8C



(a) 1 hour heat-treatment at 1100°C

FIG. 9A



(b) 1 hour heat-treatment at 1150°C

FIG. 9B

Oxidation Result of Coated CMSX-4 for 1000 h at 115

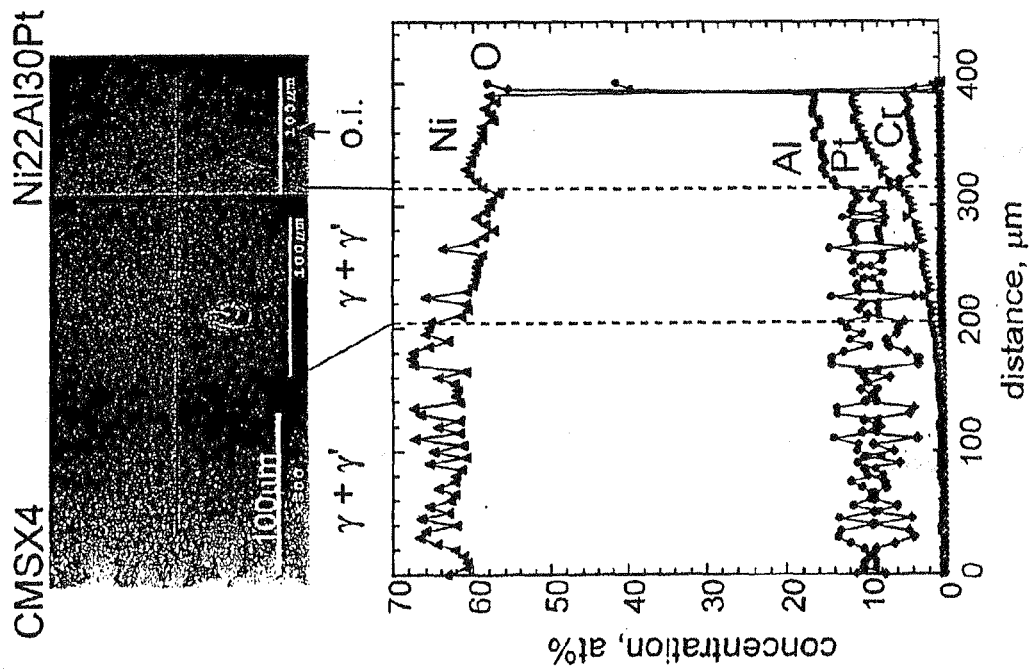


FIG. 10

Deposition of Pt+Hf-modified γ' + γ Coating on CMSX-4

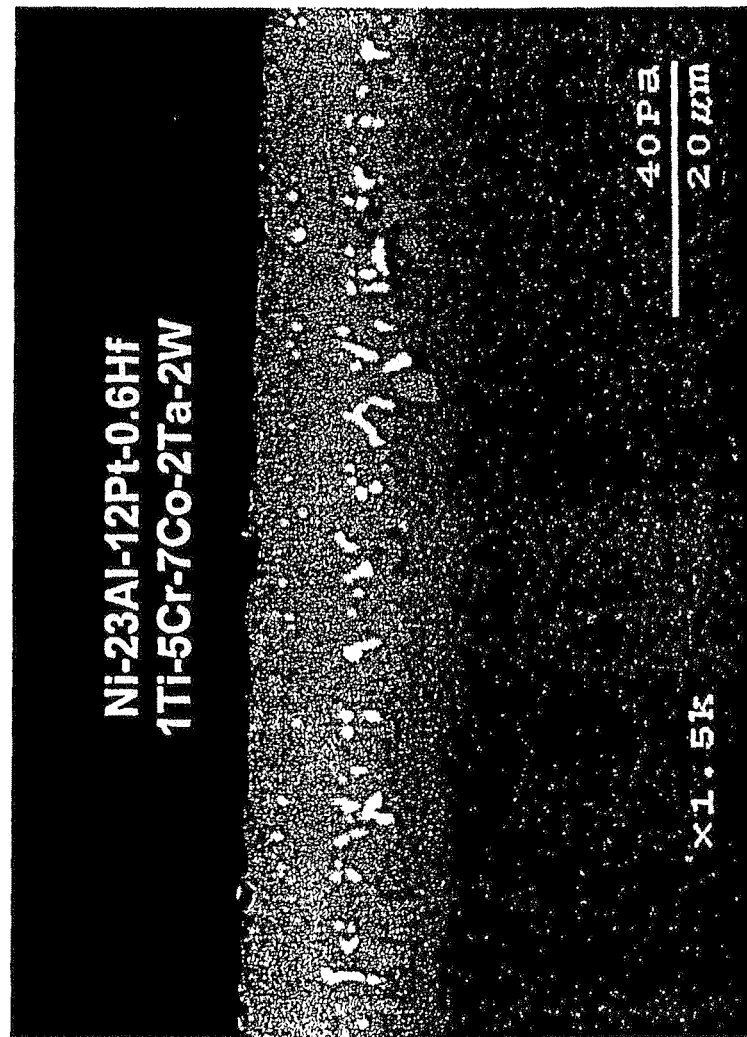


Fig. 11

NiAlPtHf Coating on CMSX-10

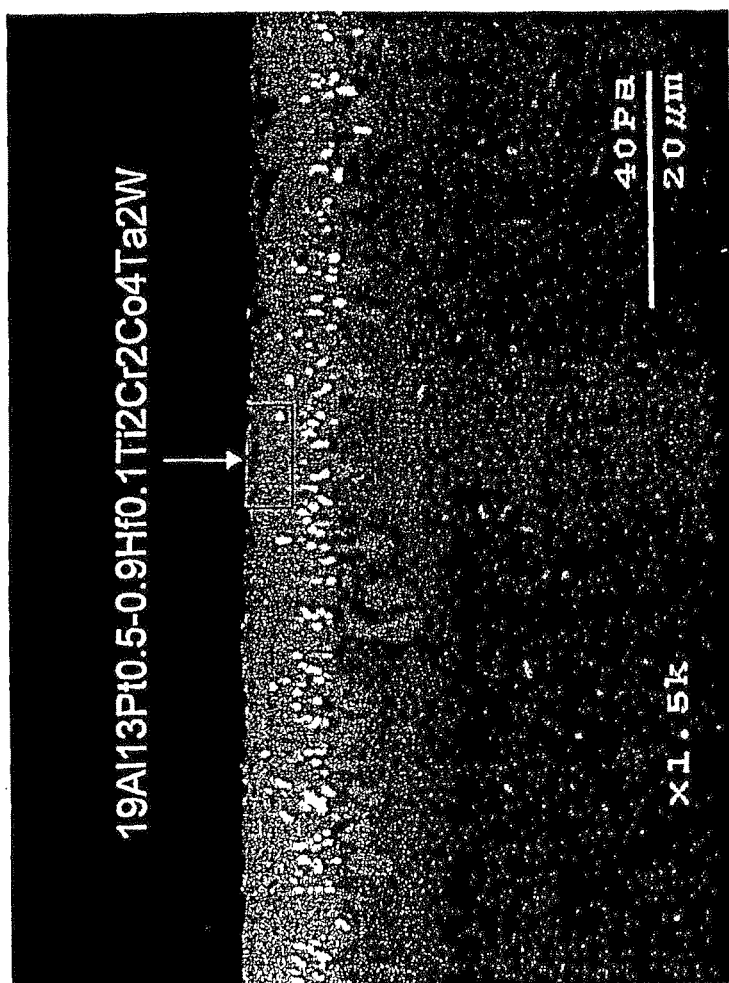


Fig. 12

Oxidation Spallation of Different Coatings During 1-Hour Cycling at 1150 °C (failure based on 50% area of spalled scale)

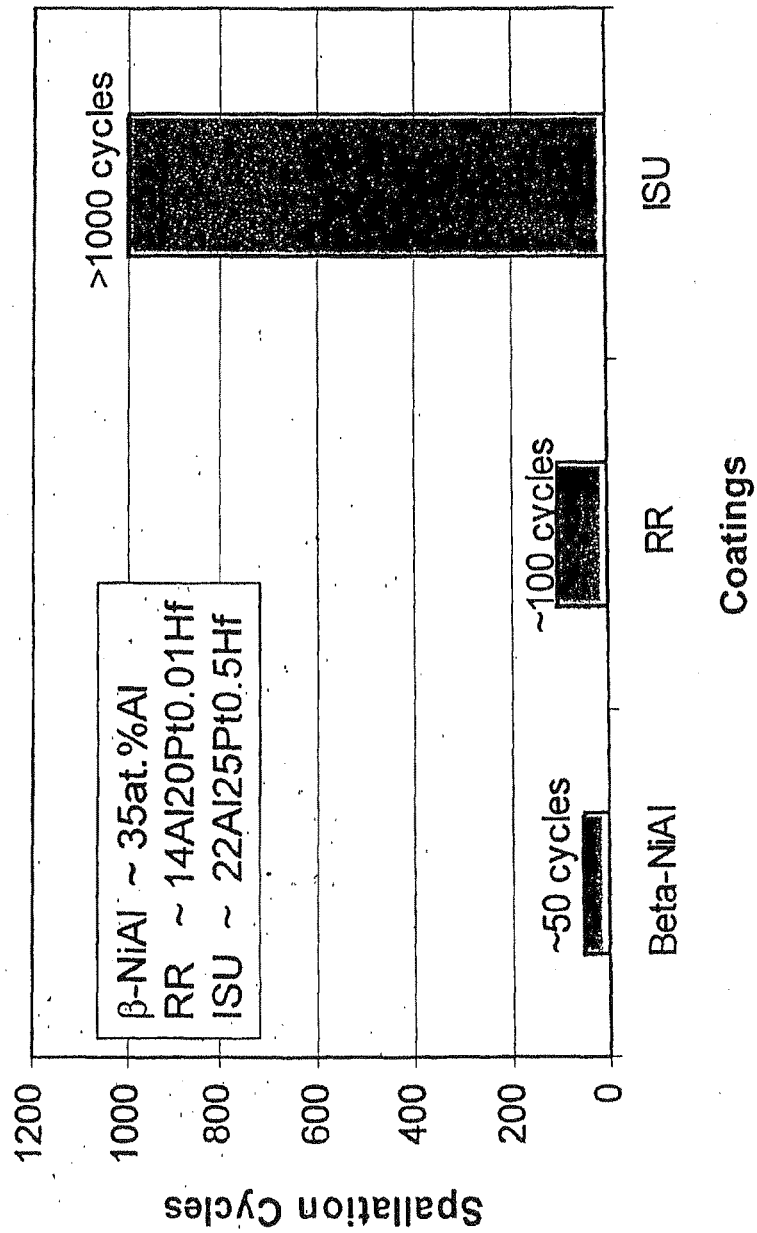


Fig. 13

ISU Coating on René-N5 Pin

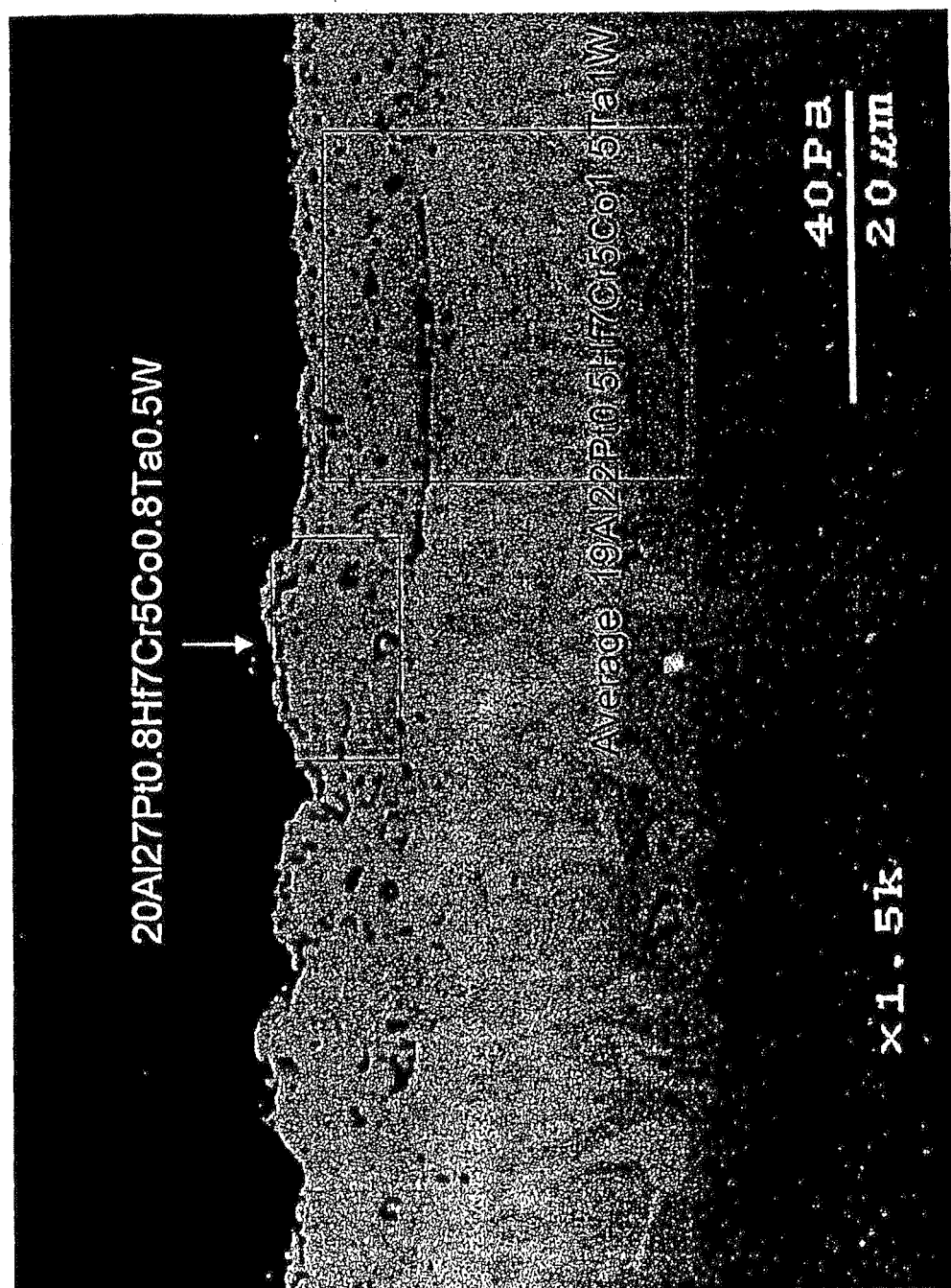


FIG. 14

EPMA Results of ISU Coating on René-N5 Pin

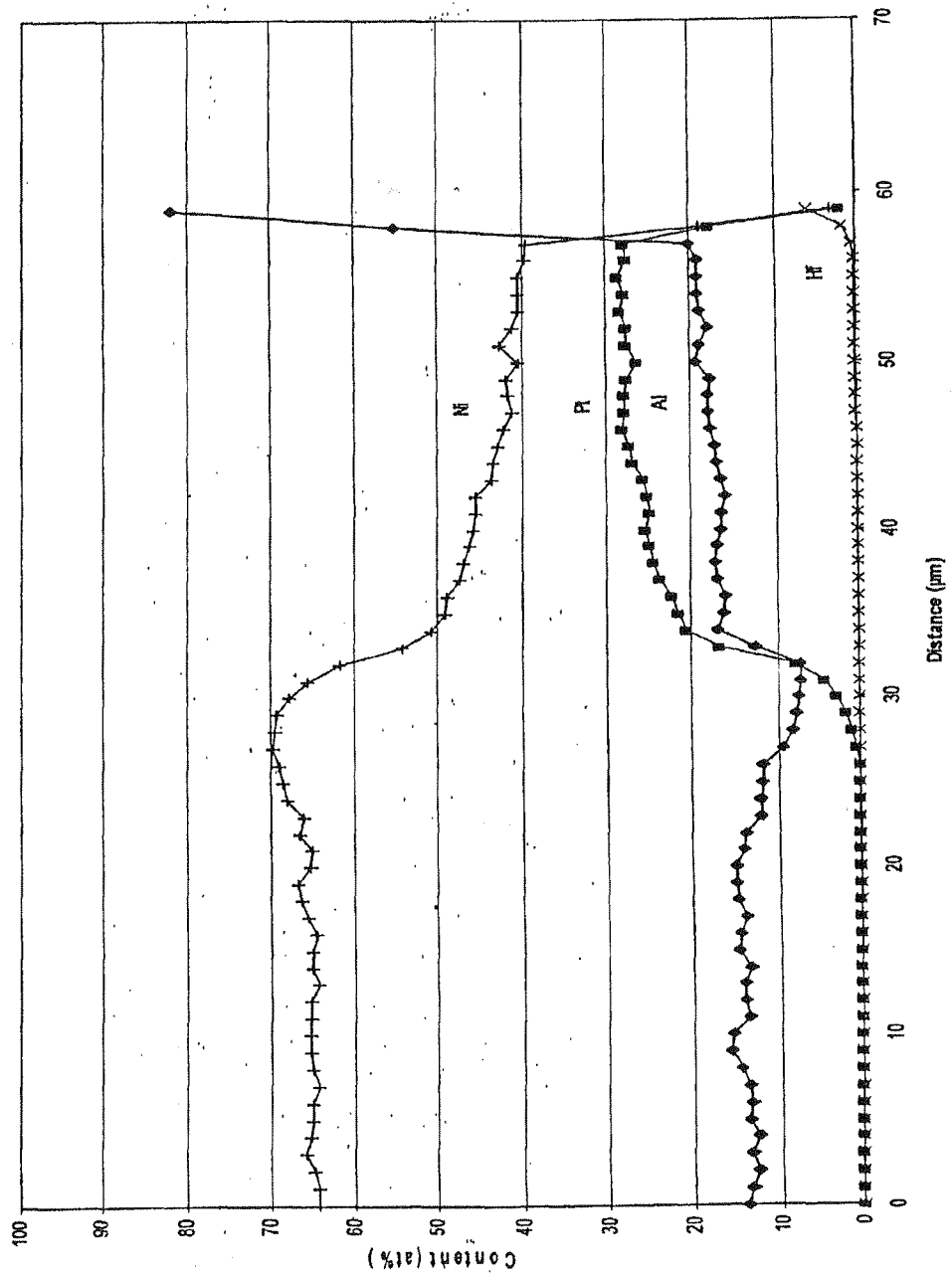


Fig. 15