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CoCrMo의 자성박막에서 Mo 양에 따른 passivity의 변화

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CHANGES IN PASSIVITY OF CoCrMo MAGNETIC THIN FILM WITH Mo CONTENT

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Cr segregation in CoCr magnetic thin film introduces poor passivity to the film surface. A decrease in magnetic saturation of CoCr thin film was found to be caused by surface degradation [1]. In order to improve surface corrosion resistance several magnetic thin films, CoCr, with various contents of Mo were prepared by RF sputtering system. These magnetic thin films were evaluated by electrochemical, accelerated corrosion testing, VSM and surface analytical techniques such as XPS and AES. The passivity of the film surface is improved dramatically by Mo addition, which results in a decrease in the number density of corrosion sites and passivating current density as shown in Figures 1 and 2. The changes in magnetic properties with surface passivation will be discussed.

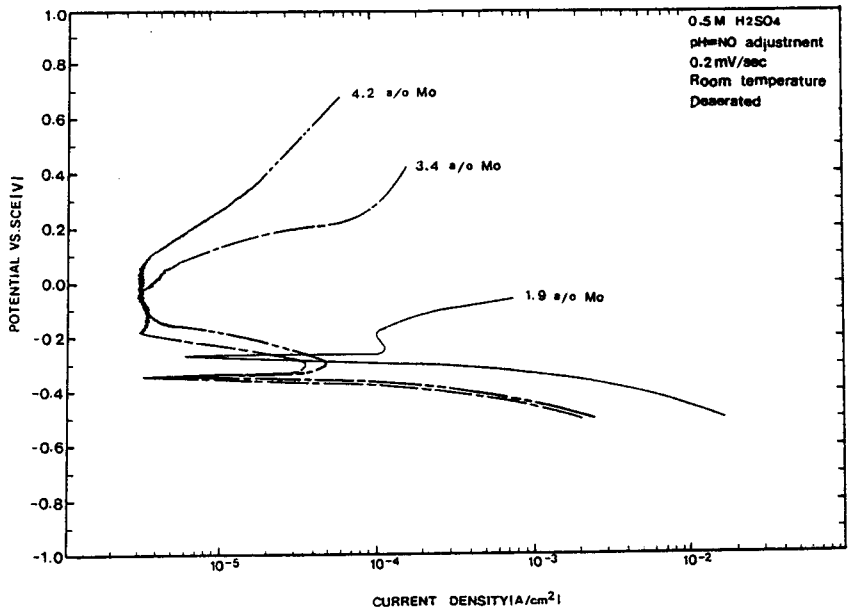
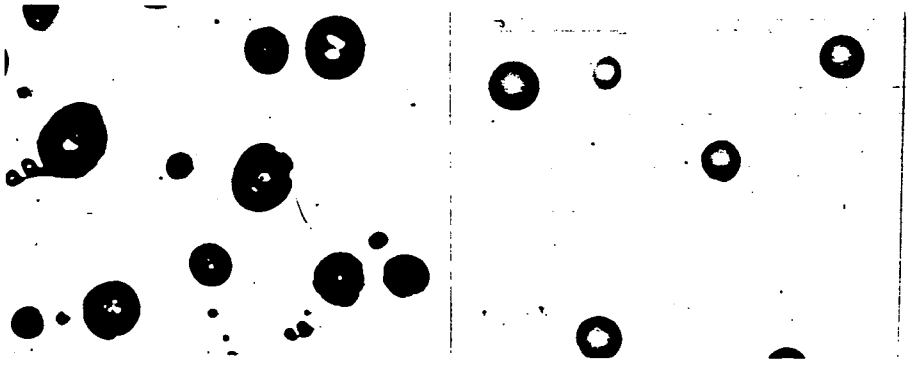


Fig.1 Potentiodynamic Polarization Curves of CoCrMo Thin Films.



0.9 a/o Mo 2.9 a/o Mo

Fig.2 Optical Micrographs of CoCrMo Thin Films.

[1] G.L McIntire and C.F.Brucker, IEEE Trans. Magn., Vol. MAG-24., PP 2221-2225, 1988