

[연구 8]

2001년도 한국표면공학회 추계 학술발표회 논문 초록집

**Investigation of Initiation of Electroless
Ni-P and Ni-Cu-P deposition on pure iron**

WU Yiyong, M. Kim*, S. C. Kwon*

School of Materials Science & Engineering, Harbin Institute of Technology,
Harbin 150001, China

*Surface Engineering Department, Korea Institute of Machinery and Materials,
Changwon, Kyungnam, Korea 641-010

In this paper, initial depositing process of electroless Ni-Cu-P alloy was investigated by means of SEM, TEM and AES. The results show that the initial deposition is inhomogeneous and there exist different transition layers between different coatings and substrates, which are decided by the structures and compositions of the bath. For Ni-P binary alloy, its deposition takes place superiorly at grain boundary and on some grains with beneficial texture, the thickness of transition layer composed of Ni-Fe-P reaches 2000 angstrom.

But during initiation of Ni-Cu-P ternary alloy, only at grain boundary is prior to be deposited electrolessly, transitioned layer contains Ni-Fe-Cu-P and is decreased to about 500 angstrom. The structures of the films of Ni-P and Ni-Cu-P are crystalline at the initial depositing stage. The mechanisms of the process are put forward in this paper.