

Plasma Assisted Deposition of TiN-Ag Ceramic/Metal Composite Coatings

Shehdeh Jodeh,
Chemical Biological and Drugs Analysis Center, Najah University,
P. O. Box 7, Nablus, Palestine
sjodeh@hotmail.com

Abstract:

As part of our continuing efforts on applying surface coatings to automotive problems, we have made various ceramic coatings and thin films by plasma assisted physical vapor deposition (PVD). We have shown that coating morphologies can be varied by varying synthesis parameters. In this study we describe plasma assisted PVD of titanium nitride-silver (TiN-Ag) composite coatings carried out using high density inductively coupled plasma (ICP) assisted magnetron sputtering plating system. We show morphological change of TiN-Ag coatings from dense to porous as a function of Ag composition. This study was conducted to investigate the potential of using ceramic/metal composite coatings for a variety of automotive applications. TiN-Ag, as one example of ceramic/metal composite coatings, was investigated for a potential to form porous as well as dense coatings. Potential applications include high surface area electrodes as well as surface coatings for friction and wear reduction.