

Electroless plating for 2D and 3D printing technologies

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Electroless plating of metals and their alloys are being investigated for integration with 2D and 3D printing. We describe the basic process concepts and the issues concerning integrating those technologies. First we discuss plating on functionalized polymer surfaces such as PDMS or low-K polymers. Next we will present recent data from metal (i.e. silver and copper) electroless plating on printed seed layer. The printed seed under study is based on silver ink; however, other options will be discussed. The samples were printed by a Fuji Dimatix 2800 printer using silver ink supplied by Sigma Aldrich Inc. The features were printed on polymer substrates that were printed by the OBJET™ 3D printer. Few polymer were tried, one of them is the VeroWhite™. Major concerns are initial roughness and surface wetting and their effect on the nucleation and growth and subsequent film quality and reliability. We discuss those issues and possible solutions.