Diffusion of Silver in DC plasma prepared Diamond Like Carbon Films  

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Diamond like carbon (DLC) films were grown using DC plasma deposition (PECVD) of Argon/Methane gas mixtures of 5-8% methane. Both Scan Electron Microscopy (SEM) and Raman Spectroscopy were used to characterize and optimize the DLC deposition. A silver film with a thickness of approximately 15 nm was deposited on the DLC films prior to annealing in flowing nitrogen in the temperature range 400C-900C. Rutherford backscattering Spectrometry was used to determine the silver diffusion profiles in DLC and extract its diffusion characteristics.