

Abstract Submitted
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The chemical and structural properties of PECVD polymerized ferrocene deposited by the sublimation of the precursor material JESSE ENLOW, Air Force Research Lab, Materials and Manufacturing Directorate, HAO JIANG, Materials Sci & Tech Applications, SOMESHWAR PERI, MARK FOSTER, University of Akron, Dept. of Polymer Science, TIMOTHY BUNNING, Air Force Research Lab, Materials and Manufacturing Directorate — The novel deposition of metal containing precursor materials in plasma enhanced chemical vapor deposition through the sublimation of the material in its solid state is investigated. The chemical composition and structural properties of these thin films, examined through XPS, variable angle ellipsometry, FT-IR, AFM and X-ray reflectivity, are reported. Using a custom designed plasma chamber and sublimation system, pp-ferrocene films have shown high chemical and mechanical robustness, are pin-hole free, have extremely smooth surface morphologies, and are highly crosslinked through the bulk. The use of sublimation in PECVD opens up the deposition technique to a wealth of new metal containing monomers. And with PECVD you retain a high amount of control over the deposition parameters and resultant film compositions for these organo-metallic films.

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