Abstract Submitted
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Pulsed plasma-enhanced chemical vapor deposition (P-PECVD) of silicon based materials with a low-frequency dielectric barrier discharge (DBD)[1] CHRISTOPHER J. OLDHAM, MATTHEW R. KING, C. RICHARD GUARNIERI, JEROME J. CUOMO, Department of Materials Science and Engineering, NC State University — This work studied a P-PECVD process for the deposition of silicon based materials. In the process, the RF power is applied in specific "on" and "off" cycles. The process is operated in a DBD configuration at atmospheric pressure. In this pressure range, vapor phase growth typically dominates conventional processes, rather than the desired film growth. Our work has found by using the P-PECVD process, gas phase growth was eliminated and adhesion to the substrate was achieved. A growth process similar to atomic layer deposition (ALD) and conventional PECVD processing will be discussed.

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