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PII: S0040-6090(17)30853-2
DOI: doi:10.1016/j.tsf.2017.11.016
Reference: TSF 36348

To appear in: *Thin Solid Films*

Received date: 17 March 2017
Revised date: 12 October 2017
Accepted date: 11 November 2017

Please cite this article as: Katarzyna Tkacz-Śmiech, Katarzyna Koper, Andrzej Mikuła, Bouchta Sahraoui, Janusz Jaglarz , Structural and optical characterization of carbon nitride layers deposited by plasma assisted chemical vapor deposition at various conditions. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Tsf(2017), doi:10.1016/j.tsf.2017.11.016

Structural and Optical Characterization of Carbon Nitride Layers Deposited by Plasma Assisted Chemical Vapor Deposition at Various Conditions

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ABSTRACT

Amorphous hydrogenated carbon nitride layers, a-C:N:H, were fabricated by radio-frequency, 13.56 MHz, plasma assisted chemical vapor deposition (RF-PACVD) from gaseous CH_4 and N_2 diluted in argon. Five series of layers were deposited at various processing conditions. In the respective experiments one of technological parameters (pressure, radio frequency power, temperature, CH_4 or N_2 flow) varied while the other were kept on constant level. The optical and structural properties