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Type: Poster Presentation

Bias-enhanced nucleation and growth for improving the opto-mechanical properties of diamond-like carbon films

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Amorphous C/diamond-like thin films have been prepared by rf plasma enhanced vapour deposition from a CH₄/Ar gas mixture. Infrared and optical-ultraviolet absorption characteristics are reported and used to characterize the bonding and optical properties of these films. The relationship between the optical band gap, dc self-bias and the hydrogen content is investigated. It is found that the hydrogen content is not directly related to the optical band gap. In addition, the tensile Young's modulus and the torsion shear modulus of the DLC films are measured using Brillouin light scattering and correlated with the possible growth of polymeric carbon chains and increased clustering.

Apply to be considered for a student award (Yes / No)?

yes

Level for award (Hons, MSc, PhD, N/A)?

PhD

Main supervisor (name and email) and his / her institution

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**Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?**

yes

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