

Abstract Submitted  
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**Graphitic carbon molecular beam epitaxy on dielectric substrates**<sup>1</sup> ULRICH WURSTBAUER, RUI HE, ALBERT RIGOSI, Dept. of Physics, Columbia University, THEANNE SCHIROS, Energy Frontier Research Center, Columbia University, ANNETTE PLAUT, School of Physics, Exeter University, LOREN N. PFEIFFER, Princeton University, PHILIP KIM, ABHAY PASUPATHY, ARON PINCZUK, Dept. of Physics, Columbia University, JORGE M. GARCIA, Dept. of Physics, Columbia University, Instituto de Microelectrónica de Madrid, IMM-CNM, CSIC — We report on growth of thin large area graphitic layers on dielectric substrate materials by means of molecular beam epitaxy (MBE) under UHV conditions. This solid source MBE technique offers highly controllable conditions without the need of gas precursors or metal surfaces. Our initial experiments on dielectric substrates such as mica, SiO<sub>2</sub> and BN clearly demonstrates the potential of this new growth technique. NEXAFS studies show that the binding mechanism in our sheets is dominated by sp<sup>2</sup> bonds and the Raman spectra confirm their graphitic nature. We will also describe STM measurements of the topography and local electronic structure of these films.

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