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Scrolling of Suspended CVD Graphene Sheets OLEG MARTYNOV, SINCHUL YEOM, MARC BOCKRATH, Univ of California - Riverside, UC: RIVERSIDE TEAM — Carbon Nanoscrolls, one dimensional spiral forms of graphitic carbon, have attracted recent interest due to their novel proposed properties [1]. Although various production methods and studies of carbon nanoscrolls have been performed, low yield and poor controllability of their synthesis have slowed progress in this field. Suspended graphene membranes and carbon nanotubes have been predicted as promising systems for the formation of graphene scrolls [2]. We have suspended chemical vapor deposition (CVD)-grown graphene over large holes in a Si/SiO2 substrate to make suspended membranes upon which nanotubes are placed. Initial experiments have been performed showing that tears or cuts of the suspended sheet can initiate scrolling. Our latest progress towards carbon nanotube initiated formation of graphene scrolls and suspended CVD graphene scrolling, along with measurements of these novel structures will be presented. [1] E. Perim et al., Front. Mater., 1:31 (2014); [2] E. Perim et al., J. Appl. Phys. 113, 054306 (2013)

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