

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

CVD films of narrow atomically precise graphene nanoribbons

MIKHAIL SHEKHIREV, ALEXEY LIPATOV, University of Nebraska-Lincoln, ASHLEY HARKLEROAD, University of Missouri - Kansas City, ALEXANDER SINITSKII, University of Nebraska-Lincoln — Atomically precise graphene nanoribbons (GNRs) is a promising material for the next-generation electronics and optoelectronics. So far, solution-based and surface-assisted approaches have been the two main routes to synthesize GNRs with atomically smooth armchair edges. However, efficient processing of the resulting GNRs into uniform thin films to fabricate GNR-based functional devices remains a formidable challenge. In this presentation we will report the synthesis of narrow armchair GNRs using an alternative approach – a radical polymerization of rationally designed molecular precursors. The technique allows fabrication of thin, transparent and conductive films of GNRs on almost any substrate. Microscopic structure and electrical properties of the fabricated GNR films will also be discussed.

Mikhail Shekhirev
University of Nebraska-Lincoln

Date submitted: 06 Nov 2015

Electronic form version 1.4