

Graphene Growth on Dielectrics using CVD

S.Karamat, A.Oral, U.Inakaya

Department of Physics, Middle East Technical University, Ankara Turkey 06800

shumailakaramat@gmail.com

Abstract

Graphene, one atom thick sp²-bonded graphite, received the attention of different disciplines of physics because of its marvelous properties. Graphene is deemed as one of the most attractive candidate materials for next-generation electrical and optical devices due to its unique properties. Chemical vapour deposition (CVD) is a promising method to grow single or multilayer graphene on metal catalysts. However, the inevitable transfer process from the metal catalyst to other dielectric substrates is difficult and it also introduces wrinkles, breakages, defects, and metallic contaminations/residues on the graphene samples. We in this work, synthesized graphene single layer on STO substrates for different growth timings by ambient pressure CVD at 1000⁰ C. The flow rates of argon/ hydrogen/ methane were maintained at 100, 50 and 8 sccm, respectively during growth. The presence of graphene grains is not visible in our samples. Optical, SEM, AFM and Raman measurement will be presented for these samples.