Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Structural and Compositional Study of Graphene grown on SrTiO3 by Chemical Vapour Deposition SHUMAILA KARAMAT, Middle East Technical University (ODTU), Ankara, Turkey, UMIT CELIK, 3Nanomagnetics Instruments, Ankara Turkey, AHMET ORAL, Middle East Technical University (ODTU), Ankara, Turkey — Graphene, a monolayer of sp2 bonded carbon atom, is considered as one of the most promising candidate materials for future electronics. The most critical step in graphene research is its transfer from the growth catalyst to the dielectric substrate, many unavoidable issues in the transfer process are: contamination from etchants, photoresist residues, wrinkles, and mechanical breakage. The direct growth of graphene on the substrates without using catalyst offer new opportunities in device fabrication without any transfer process. But till now, the field of direct graphene growth on dielectrics or insulating substrates is not mature like growth on metallic catalysts using CVD. We used chemical vapour deposition to grow graphene on SrTiO3 (110) substrates. The growth was carried out in presence of methane, argon and hydrogen. Raman Spectrum clearly showed the D and G peaks which were absent in bare substrate. XPS was used to get information about the presence of necessary elements, their bonding with STO substrates. AFM imaging clearly showed graphene island formation on substrates.

Ahmet Oral
Middle East Technical University (ODTU), Ankara, Turkey

Date submitted: 24 Nov 2015 Electronic form version 1.4