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Large area graphene growth on 6H-SiC(0001) L.I. JOHANSSON, C. VIROJANADARA, M. SYVÄJÄRVI, R. YAKIMOVA, IFM, Linkoping University, A.A. ZAKHAROV, T. BALASUBRAMANIAN, MAX-lab, Lund University —
Large area graphene growth on commercial Si-face on-axis 6H-SiC(0001) is demonstrated in this work. Samples were produced in a prototype of an inductively heated furnace. The growth was carried out in strongly isothermal conditions at a temperature of 2000 C and at an ambient argon pressure of 1 atm. The quality and thickness of the graphene layers grown, using this *ex situ* method, were investigated using PES, ARPES), LEED as well as LEEM, PEEM micro-LEED and micro-PES at specifically defined small areas. Our results show that single layer graphene is formed over quite large areas on the sample but that two different domains can exist on some parts. A comparison with an *in situ* graphene sample, prepared by resistive heating to 1275 C, was made. The results then obtained were similar to earlier findings [1-2] and showed that the size of the graphene flakes were very small compared to those obtained on the samples prepared with our *ex situ* method.

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Leif Johansson
IFM, Linkoping University

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