

Abstract Submitted  
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**The kinetics of white graphene (h-BN) growth on the planarized Ni foil surfaces**<sup>1</sup> MYUNG JONG KIM, HYUNJIN CHO, SUNGCHAN PARK, KIST, DONG-IL WON, SANG OOK KANG, Korea University, SEONG-SOO PYO, DONG-IK KIM, SOO MIN KIM, KIST, HWAN CHUL KIM, Chonbuk National University, KIST COLLABORATION, KOREA UNIVERSITY COLLABORATION, CHONBUK NATIONAL UNIVERSITY COLLABORATION — Morphology of the surface and the grain orientation of the metal catalysts have been considered as two important factors for the growth of h-BN by a CVD method. We report correlation between growth rate of h-BN and orientation of nickel grains. The surface of the nickel foil was first planarized by electrochemical polishing and subsequently annealed in atmospheric pressure hydrogen to suppress the effect from the surface morphology. The atmospheric annealing with hydrogen reduced nucleation site of h-BN such that large crystal size mainly has grown from the grain boundary and few other nucleation sites in the nickel foil. Higher growth rate of h-BN was observed from the nickel grains that has  $\{110\}$  or  $\{100\}$  orientation due to higher surface energy.

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