Abstract Submitted
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Atomic Force Microscopy-Based Local Tunable Oxidation of Graphene SATORU MASUBUCHI, IIS University of Tokyo, INQIE University of Tokyo, MIHO ARAI, IIS, University of Tokyo, TOMOKI MACHIDA, IIS University of Tokyo, INQIE University of Tokyo, PRESTO-JST — We have fabricated graphene/graphene oxide/graphene (G/GO/G) junctions by local anodic oxidation lithography using atomic force microscopy (AFM). The conductance of the G/GO/G junction decreased with the bias voltage applied to the AFM cantilever V_{tip}. For G/GO/G junctions fabricated with large and small $|V_{tip}|$. GO was semi-insulating and semiconducting, respectively. AFM-based LAO lithography can be used to locally oxidize graphene with various oxidation levels and achieve tunability from semiconducting to semi-insulating GO [S. Masubuchi *et al.*, Nano Lett. **11**, 4542 (2011).]

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