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The G-band phonon frequency in single layer graphene HYUNGBIN SON, ALFONSO REINA, MILDRED DRESSELHAUS, JING KONG, Massachusetts Institute of Technology — Recent experimental studies on the high-frequency phonon modes of as-deposited n-graphene layer (nGL) films report that the frequency of the G-band in single graphene layer is generally higher than that in nGL films (n \geq 2) and highly ordered pyrolytic graphite (HOPG). However, our results show that the frequency of the G-band in single graphene layer approaches that in HOPG when the single graphene layer transferred to different substrate, sonicated, or exposed to NaOH. These results suggest that the difference in the frequency of the G-band in single graphene layer and HOPG is due to the strain generated in the deposition process.

Hyungbin Son
Massachusetts Institute of Technology

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