

Abstract Submitted
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Development of optical approaches for identifying individual graphene-based sheets on surfaces¹ INHWA JUNG, RICHARD PINER, DMITRIY DIKIN, SASHA STANKOVICH, RODNEY S. RUOFF, Department of Mechanical Engineering, MARTINA HAUSNER, Department of Civil and Environmental Engineering, Northwestern University, Evanston, IL 60208 — We are developing a light microscope-based method for identifying thin graphene-based sheets on silicon wafers with a thin dielectric layer (SiO₂ or Si₃N₄). Different thicknesses of this dielectric layer have been tested. Optics, and experiments with these thin dielectric layers, enabled us to optimize the thickness that yields the best contrast; SiO₂ is useful for discerning multiple stacked sheets and Si₃N₄ for identifying individual sheets. Both multiple or single wavelength sources can be used effectively. By comparing the optical images with data obtained by AFM and SEM, it has been possible to prove that our method can detect the presence of individual graphene-based sheets.

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