

Abstract Submitted
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Large scale commercial fabrication of high quality graphene-based assays for biomolecule detection MITCHELL LERNER, YINGNING GAO, BRETT GOLDSMITH, FRANCIE BARRON, Nanomedical Diagnostics — Large numbers of high quality graphene transistors with mobility approximately $5000 \text{ cm}^2/V * s$ were fabricated by chemical vapor deposition and packaged into ceramic carriers with an open cavity design. The ceramic carrier is compatible with standard electronics assembly, enabling the readout of graphene properties on the benchtop without large, expensive probing systems. After chemical functionalization, these sensors demonstrate sensitivity in the pM range and selectivity to many classes of biomolecules as a three terminal liquid-gated field effect transistor. High precision measurements of protein kinetics captured using this technology, commercially known as AGILE R100, are comparable and can exceed the capabilities of state-of-the-art biomolecule characterization tools. Recently published in Sensors and Actuators B

Mitchell Lerner
Nanomedical Diagnostics

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