

Abstract Submitted
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Experimentally determined optical-properties of monodisperse graphene quantum dots with controlled size and geometry VIKAS BERRY, Kansas State University, NIHAR MOHANTY, ASHVIN NAGARAJA — In this talk, we will present a novel route for high throughput production of monodisperse GQDs with controlled spatial dimensions (5 nm - 100 nm at 1 nm resolution) and geometry (squares, rectangles, and triangles). We would show the first detailed experimental demonstration of the GQD optoelectronic-property-tuning via tailoring of their spatial dimensions and geometry. Further, we would be presenting the detailed structural, optical and electronic characterization of the as-obtained GQDs via various microscopic and spectroscopic techniques. While the top down methods of fabrication including lithography-based methods or sonochemical methods are either extremely low throughput or have limited control on GQDs' dimensions and geometry; the bottom-up fabrication methods are limited by the achievable size (< 3 nm).

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