



Technical Data Sheet

ACS Material Monolayer Hexagonal Boron Nitride (hBN) on Si/SiO₂ Substrate

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1. Preparation Method

CVD Method

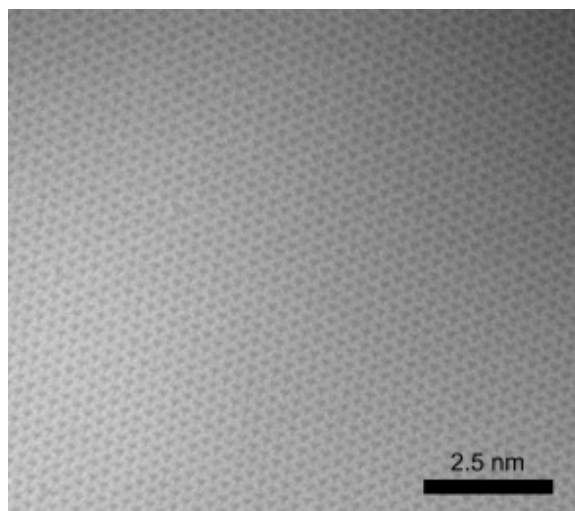
2. Characterizations

Monolayer hBN	
Transparency	> 97%
hBN Coverage	100% with sporadic adlayers
Raman Peak	1370 /cm ⁻¹
Bandgap	5.97 eV
Grain size	>4 μm
h-BN thickness	monolayer (0.333nm theoretical)

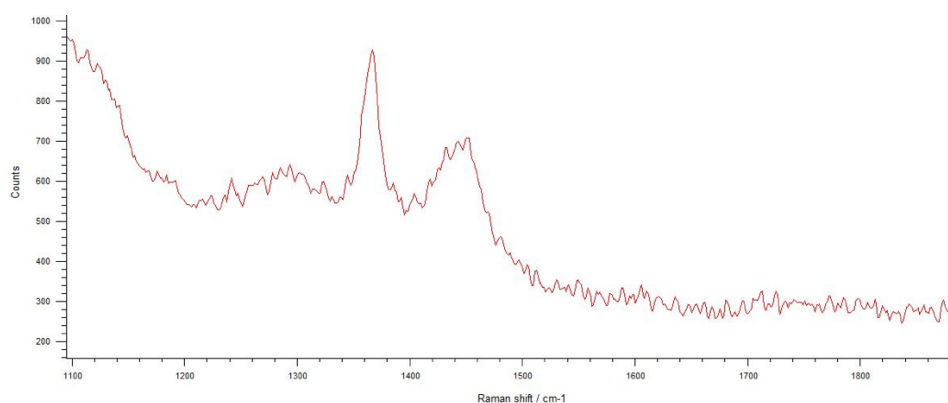
Si/SiO ₂ Substrate	
Type/Doping	P/B
Wafer Thickness	500 +/- 50 μm
Oxide Thickness	300 nm
Resistivity	1-10 (Ω -cm)
Orientation	<1-0-0>
Growth Method	CZ
Metal Impurities	1.00e ¹⁰ – 5.00e ¹⁰ (at/cm ²)



Typical Crystal Diffraction Image of ACS Material Monolayer hBN



Typical TEM Image of ACS Material Monolayer hBN



Typical Raman Spectrum of ACS Material Monolayer hBN

* The indicated product metrics are generic to our transfer process. For all ACS Material products, the displayed range represents electronic data that we have obtained using our in-house transfer capabilities to transfer hBN to SiO₂. Your own metrics will depend entirely on the transfer methods that you use, and the resultant quality of your transfers.

3. Application Fields

- 1) Proton conductors
- 2) Fuel cells
- 3) Water electrolysis
- 4) Graphene-based devices

4. User Instruction

To ensure the maximum shelf life of your graphene sample, it is best stored under vacuum or in inert atmosphere (Argon or Nitrogen) conditions once the vacuum sealed package has been opened.

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