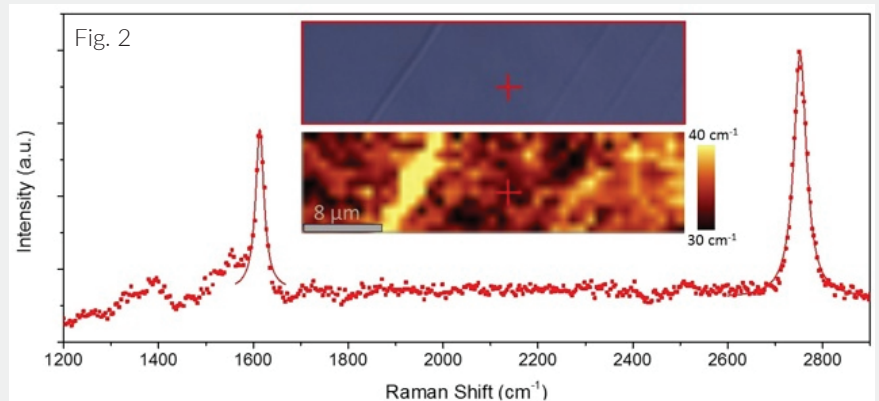
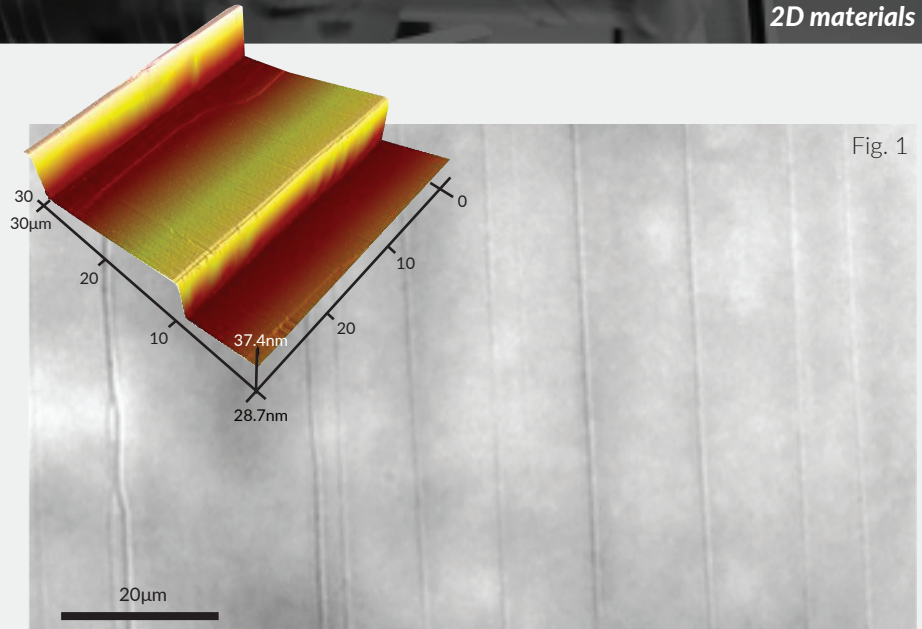


## Description

Our high quality graphene grown on silicon carbide (SiC) is manufactured by our partner company Graphene Nanotech (GPNT). The graphene is produced by high-temperature annealing of SiC. Unlike chemical vapor deposition, this production method does not introduce metal contaminants. Additionally, the SiC substrate on which the graphene forms is a suitable substrate for device fabrication, therefore eliminating the need to transfer the graphene, substantially reducing both processing time and costs, and limiting the risk of damage during manipulation.

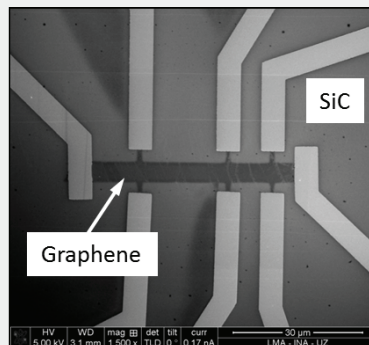
Our graphene is offered in standard square 8 x 8 mm<sup>2</sup> samples, cut from a semi-insulating, on-axis 4H-SiC wafer, with an epitaxial graphene layer grown on the silicon face of the silicon carbide substrate.

Fig. 1 shows an optical image one of our graphene samples, where the reconstructed terraces on Si-face SiC wafers are visible. The surface morphology as determined by atomic force microscopy is shown in the inset. Lastly, the Raman spectrum shown in Fig. 2 was measured at the position marked with a red cross, and mapping of the 2D peak width measured at the indicated area.



We also offer **other sizes or technical specifications**, such as graphene on C-face, off-axis substrates or ion-implanted samples for back gated devices such as FET transistors.

Samples can be **pre-installed on a range of sample holders**, for easy, fast and low risk manipulation.



Each sample is shipped with **characterization data** corresponding to our quality control during production.

We additionally offer **full characterization** of your sample.

## Technical Specifications

<b>Sample Size</b>	8mm x 8mm	<b>Graphene Charge Carrier Mobility at 25°C</b>	2500-3000 cm <sup>2</sup> V <sup>-1</sup> s <sup>-1</sup>
<b>Sample Thickness</b>	(500 ± 50)μm	<b>Graphene Carrier Density</b>	10 <sup>12</sup> cm <sup>-2</sup>
<b>Graphene Film Coverage</b>	100%	<b>Graphene Carrier Type</b>	Electrons
<b>Monolayer Graphene Area</b>	(85 ± 5)%	<b>Substrate Material</b>	4H-SiC
<b>Graphene Terrace Width</b>	(10 ± 5)μm	<b>Substrate Orientation</b>	{0001} ± 0.25°
<b>Graphene Terrace Height</b>	20-40 nm	<b>Substrate Face</b>	Si
<b>Graphene Optical Transmittance</b>	> 97%	<b>Substrate Resistivity</b>	4.4 · 10 <sup>9</sup> Ωm
<b>4HSiC Optical Transmittance</b>	> 65%	<b>Dopant</b>	Nominally Undoped
<b>Graphene Sheet resistance</b>	350Ω□		

## Applications

Electronics	Photonics	Sensing
<ul style="list-style-type: none"> <li>• Transistors</li> <li>• Transparent conducting electrodes</li> <li>• Frequency mixers</li> <li>• Quantum dots</li> <li>• Organic electronics</li> <li>• Spintronics</li> </ul>	<ul style="list-style-type: none"> <li>• Optoelectronic Devices</li> <li>• Plasmonic and Metamaterials</li> <li>• Nanoantennas</li> <li>• Optical modulators</li> <li>• Ultraviolet lenses</li> </ul>	<ul style="list-style-type: none"> <li>• Hall effect sensors</li> <li>• Pressure sensors</li> <li>• Piezoelectric sensors</li> <li>• Nanoelectromechanical Systems (NEMS)</li> <li>• Molecular adsorption</li> <li>• electromagnetic radiation detectors (IR-VIS)</li> <li>• Antibody-functionalised sensors for viral/microbial detection</li> </ul>