

Applications



Graphene device research

Graphenea delivers state-of-the-art graphene devices directly to the researcher to allow application-driven research without the added burden of having to fabricate high-quality graphene FETs.



Biosensors

Graphene Biosensors can fundamentally transform biological testing capabilities by providing a uniquely sensitive platform for the label-free detection of analytes including proteins, small molecules and DNA.



Bioelectronics

Due to its unique structure and amazing physicochemical properties including high chemical inertness, large specific surface area, high electric conductivity, and biocompatibility graphene has a great potential in Bioelectronic applications.



Photodetectors

Graphene's unique optoelectronic properties are promising to realize photodetectors with ultrafast photoresponse over a wide spectral range from far-infrared to ultraviolet radiation.



Chemical sensors

Many applications require the ability to detect chemicals in the air or in water and with increasing sensitivity demands. Graphene chemical sensors have demonstrated the detection of single molecule adsorption events – it doesn't get more sensitive than that!



Magnetic sensors

The areas of application cover many fields, such as automotive, consumer electronics, healthcare and defense industry, where magnetic field sensors are used for position detection, current monitoring and angular sensing.



Graphenea Headquarters

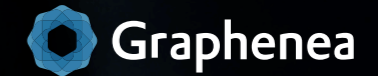
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GFET-S

For sensing applications

Ready-to-use graphene sensors
are now within your reach

www.graphenea.com



Features

State-of-the-art GFETs utilizing Graphenea's established consistently high-quality graphene

- Two different layouts available
- Devices are ready for your novel functionalization
- Perfect platform device for new sensor research and development
- Strict quality control

Specifications

Chip dimensions:
10 mm x 10 mm

Number of GFETs per chip:
36 (S-10) and 12 (S-20)

Gate oxide material:
SiO₂

Gate oxide thickness:
90 nm

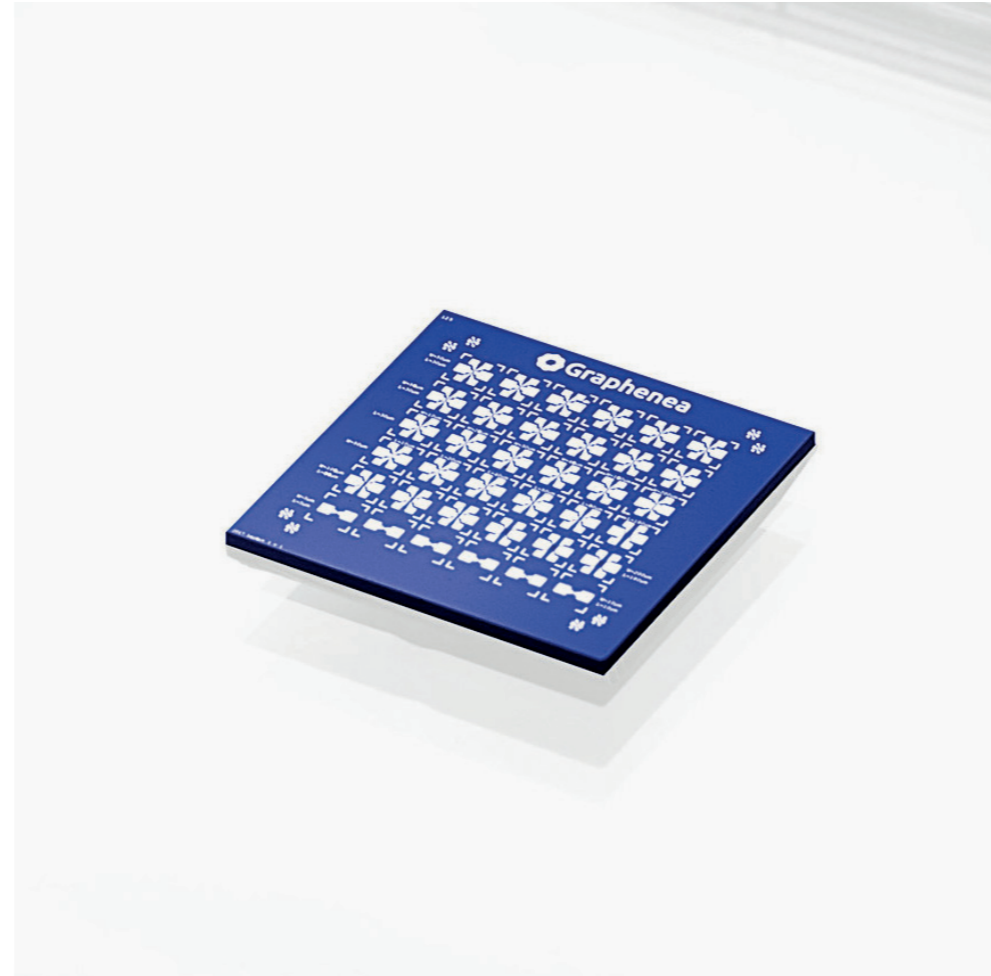
Graphene field-effect mobility:
>1000 cm²/V.s

Residual charge-carrier density:
<2 x 10¹² cm⁻²

Yield:
75 %

GFET-S10

The GFET-S10 from Graphenea provides 36 graphene devices distributed in a grid pattern on the chip. 30 devices have a Hall-bar geometry and 6 have a 2-probe geometry. The hall-bar devices can be used for Hall measurements as well as 2- or 4-probe devices. The graphene channel dimensions vary to study the geometry dependence on device properties.



GFET-S20

The GFET-S20 chip from Graphenea provides 12 graphene devices located in the centre of the chip and the probe pads located near the periphery of the chip. This optimised geometry allows for easy functionalisation and measurements in liquid environments. All devices have a 2-probe device geometry, and they are encapsulated with a small opening in the graphene channel in order to avoid parasitic signals and to improve the signal-to-noise ratio.

