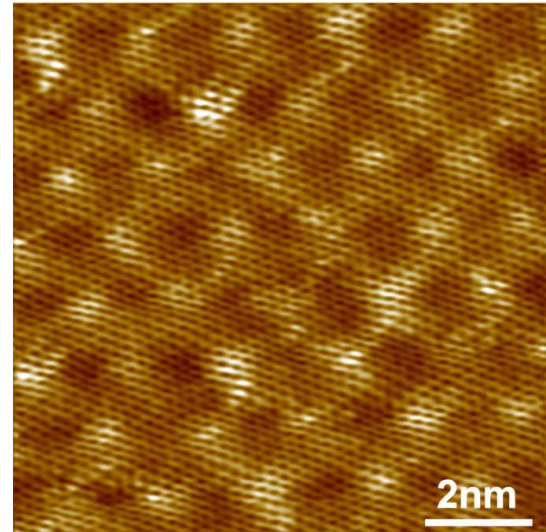


## Customised Graphene epitaxy layer on SiC substrate for R&D



*Graphene 1-atom layer on SiC substrate.*

### Graphene layer on SiC substrate

- sizes: 5mm x 5mm, 10mm x 10mm, 20mm x 20mm
- n-type or semi-insulating type SiC substrate 4H or 6H
- A world unique technology used – a free standing 1-atom thick C layer (graphene) deposited on the SiC substrate by the CVD technique resulting in higher mobility and smaller crystal strain

## Customised SiC epitaxy on SiC substrate

### SiC layer on SiC 2", 3" substrate

- n-type SiC layer (doped with Nitrogen) on SiC substrate, CC in the range  $10^{15}$ - $10^{19}/\text{cm}^3$
- p-type SiC layer (doped with Aluminium) on SiC substrate, CC in the range  $10^{15}$ - $10^{19}/\text{cm}^3$
- undoped SiC layer background concentration ( $\text{CC}=10^{14}/\text{cm}^3$ )
- thickness discrepancy  $\pm 10\%$
- doping discrepancy  $\pm 10\%$
- max thickness  $100\mu\text{m}$
- roughness  $R_a = 0.2$ - $0.5\text{nm}$
- Possible epitaxial layers stacks: Schottky diode, PIN diode, JFET, MISFET

### Substrate specification

- SiC (0001), conductive or semi-insulating
- typical miscut  $4^\circ$ - $8^\circ$ , could be smaller at specific request
- dimension 2", 3" and 4" in diameter