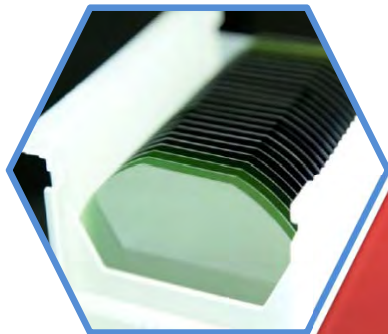


SiC Epitaxial Wafers

High Grade Epi (HGE)



Film/
Crystal
Growth

Surface
Treatment

LED
Technology

Specialty
Gas
Chemicals

High-
Temperature
Heat
Treatment

Casting/
Molding

Aluminum
Technology

Plant Growth Facilities

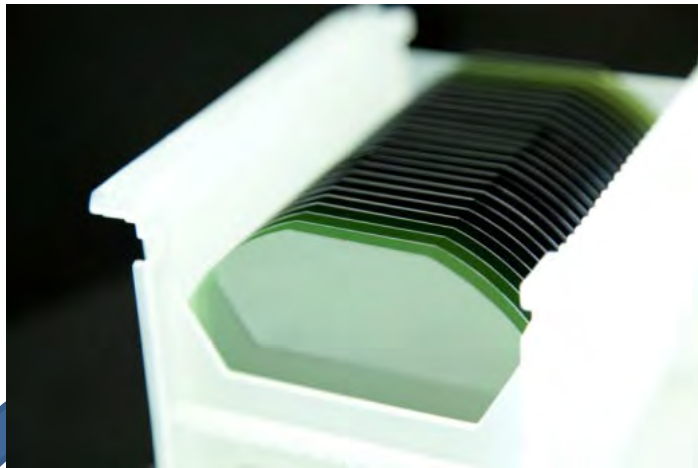
Fast Cultivation:
S Method
Cultivation Unit



Product example

Using the epitaxial method, SiC thin film is formed on the SiC substrate wafer for power semiconductor applications.

Wafer size : 4 inch, 6 inch



Final applications:

- Server power supply
- Solar battery power inverter
- Electric railway vehicle inverter
- Automotive inverter

Our technologies

■ **Epitaxial technology**

We own the technology to uniformly form SiC thin film using Si material gas and C material gas at high temperatures of 1,500 to 1,600°C.

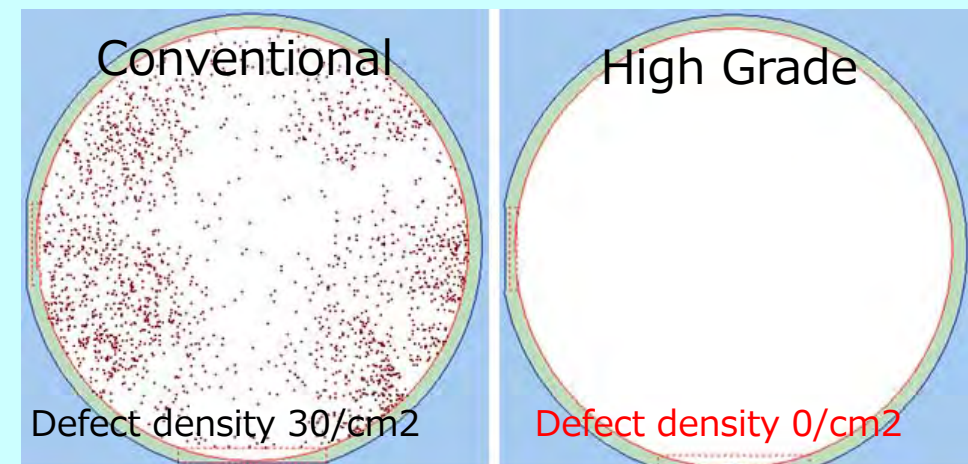
We can reduce basal plane dislocation that lose reliability of MOSFET.

■ **Evaluation technology**

We own the following technologies to deliver the best products to device manufacturers:

- Optical surface inspection technology
- Film thickness and carrier concentration measurement technology
- Surface contamination inspection technology

Distribution of basal plane dislocation after epitaxial growth



Plant Growth Facilities

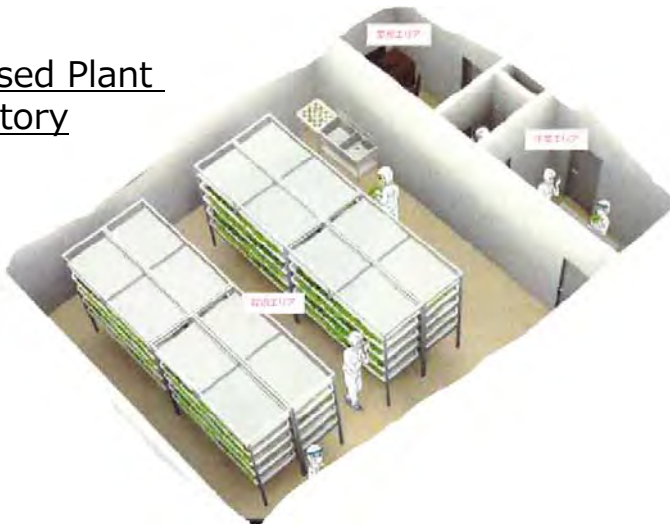
昭和電工株式会社

Product example



LED plant growth facilities,
Cultivation systems

Closed Plant Factory



Through the combination of technologies and products of SHOWA DENKO, we provide various products and materials for closed-type plant growth facilities.

Our technologies

■ LED-related technology



- Wavelength control
- High luminance
- Lighting design

■ Aluminum fabrication technology



- Structure design
- Fabrication & assembly
- Seismic-resistant design
- Antibacterial alumite

■ Cultivation technology



Conventional
fluorescent lighting

S Method

- Fast cultivation S method (S500)
- Increase of varieties
- Quality improvement
- Higher functionality