



GermanSolarZA

Ge single crystal solar panel





Overview

How to grow a 3-inch diameter Ge crystal?

Important basic process steps for the very high purity, 3-inch diameter Ge crystal growth technology development were successfully established in-house and are presented in detail. Crystals with a diameter of 80 mm and a length of up to 140 mm length could be grown. First, the GeO₂ source powder has to be reduced to Ge metal by hydrogen.

What is the EPD value of a Ge crystal?

An ultrahigh-pure Ge crystal with EPD values of 4620 cm⁻² (top part: sample A); 8380 cm⁻² (after shoulder part: sample B), and 17,000 cm⁻² (bottom part: sample C). Table 2. Hall-effect measurements (77 K) showing ultrahigh purity of the crystal.

What purity is required for a Ge crystal?

But for a normal semiconductor grade Ge crystal, a starting material purity with an electronic grade (6 N) would be required. The intrinsic resistivity of Ge is about 50 Ω cm at room temperature and generally corresponds to a chemical purity of 6 N or better. The ZR was performed under pure H₂ atmosphere supplied from a Pd diffusion cell.

Can n-type or p-type Ge crystals be produced with high purity?

But, if the concentrations of the shallow donor or acceptors in the starting material for the growth can be controlled and maintained, an undoped n-type or p-type Ge crystals with very high purity can be realized.



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Infinite lateral growth of (001) single crystal strip in Ge film ...

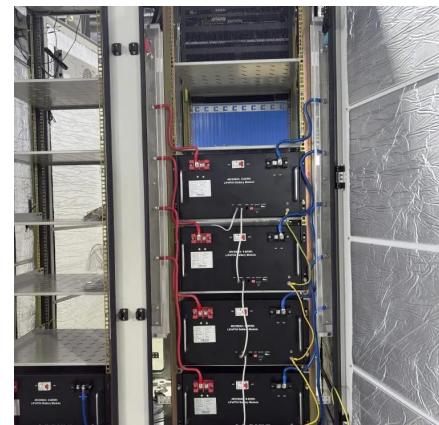
A single crystal strip of Ge, exhibiting a predominant crystal orientation of (001), was successfully grown within a 60 nm thick sputtered Ge film using the micro-chevron laser ...

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[Germanium Crystals , Ge Crystal Materials](#)

For example, good chemical stability, strong corrosion-resistance, easy processing, high and uniform transmittance, high radiation resistance, high frequency, and good photoelectric performance. The ...

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[Germanium Single Crystal Substrate Suppliers/Mfgrs, 2-6 ...](#)

Market and application Germanium single crystal wafers are an important semiconductor substrate material. These high-quality substrates are primarily used in CPV, outer-space solar ...

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[P Type Thin Germanium \(Ge\) Wafer for Solar Cell Fabrication](#)

PAM-XIAMEN offers single crystal thin Germanium wafer. Germanium is a chemical element, belonging to the IVA group elements. Its chemical symbol is Ge.

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[Single Crystal Germanium \(Ge\) Wafer Grown ...](#)

Single crystal Germanium wafer in electronic, IR or cell grade grown by VGF/LEC is for III-V triple-junction solar cells and power CPV systems.

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[Development of Large-Diameter and Very ...](#)

Using these advanced process know-hows, a technology to grow volume Ge single crystals of large diameter (3 in.) with very high purity (net carrier concentration $5 \times 10^{10} \text{ cm}^{-3}$ or equivalent to 1 part per ...

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[Low cost single crystal CdZnTe-Silicon tandem PV](#)

A polycrystalline CdS emitter was modeled since it is used in commercial CdTe panels and was used as the emitter in a single-crystal CdTe solar cell that resulted in a V_{oc} of ...

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[Single Crystal Germanium \(Ge\) Wafer Grown by VGF / LEC](#)



Single crystal Germanium wafer in electronic, IR or cell grade grown by VGF/LEC is for III-V triple-junction solar cells and power CPV systems.

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Single crystal and amorphous Ge for use in stand-alone and ...

Thin film and single crystal germanium solar cells are of interest for use in low cost thermophotovoltaics [1,2] and in multijunction solar cells. Single crystal Ge substrates have ...

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Germanium Crystals , Ge Crystal Materials , Ge Single



Development of Large-Diameter and Very High Purity Ge Crystal ...

Using these advanced process know-hows, a technology to grow volume Ge single crystals of large diameter (3 in.) with very high purity (net carrier concentration 5×10^{10} cm ...

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GE now offers robust solutions for every part of a large-scale solar system, from components such as GE's Brilliance* solar inverters, monitoring and controls, thin film solar panels, and racking ...

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Crystals , Ge

For example, good chemical stability, strong corrosion-resistance, easy processing, high and uniform transmittance, high radiation resistance, high frequency, and good ...

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GE Solar Panels

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GE Solar Panels

GE's solar module product line covers 30 to 165 watts. The solar modules are heavy duty and easy to mount. Their products use the single crystal silicon solar cell, which works at full ...

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