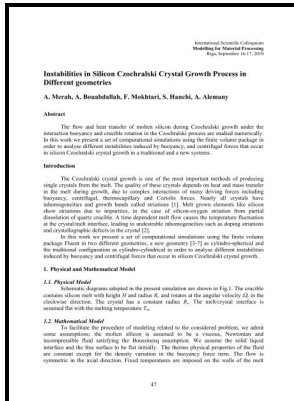


Transient effects associated with Czochralski crystal growth.

University of East Anglia - On the quasi



Description: -

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Tags: #Czochralski #method

Three

Two cases are considered, namely i solid body rotation of crystal and melt and ii no melt rotation at large distances from the interface. The most important application may be the growth of large cylindrical, or , of used in the electronics industry to make like. Further evidence reveals however, that on a time scale more appropriate to the crystal growth process, the time-averaged flow has a weaker three-dimensionality, in relation to the mean axisymmetric part, and there is only slight distortion to the temperature field beneath the crystal.

Transient global modeling for the pulling process of Czochralski silicon crystal growth. I. Principles, formulation, and implementation of the model

Oxygen impurities can have beneficial or detrimental effects. This method is also used with semiconductor materials other than silicon, such as gallium arsenide. One of the earliest Si plants, the crystals produced by this early apparatus were only one inch in diameter.

Czochralski process

Czochralski silicon CZ-Si crystal growth is invariably accompanied by the generation and transport of impurities, such as carbon C and oxygen O , from chemical reactions in the high-temperature range.

Numerical analyses and experimental validations on transport and control of carbon in Czochralski silicon crystal growth

Width is controlled by precise control of temperature, speeds of rotation, and the speed at which the seed holder is withdrawn.

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