ABSTRACT OF THE DISCLOSURE

In an improved Czochralski process for growing silicon crystals, wherein a single-crystal silicon seed is pulled from a molten silicon source to grow the crystal therefrom, a pre-oxidized arsenic dopant is added to the molten silicon source to alter an electrical property of the grown crystal. The pre-oxidized arsenic dopant includes granular particles of metallic arsenic having a surface film of arsenic oxide, the surface film having a thickness of ten microns to one millimeter. After doping, the molten silicon source is moved from the grown crystal, and an applied temperature is increased to burn excess pre-oxidized dopant.

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