



Wide Bandgap Semiconductor

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Message from the Guest Editor

SiC, GaN and AlN refer to wide bandgap semiconductors with high bond energy. On the basis of this group of semiconductors, various optoelectronic devices can be created, including ultraviolet light-emitting diodes, laser diodes and room temperature quantum emitters, as well as powerful high-frequency, high temperature electronic devices and piezoelectric resonators. However, high-quality bulk crystals of large diameter (4 inches or more) are required for the successful implementation of the industrial production of such devices. The growth of these crystals is one of the most important problems standing in the way of their widespread use in the modern industry. Another problem is the insufficient knowledge of the doping mechanisms, which makes it difficult to obtain a material with the required properties.

The potential topics include, but are not limited to:

- Growth of the high quality SiC, AlN and GaN bulk crystals
- Doping of the crystals
- High temperature diffusion
- Native defects and impurities
- Application





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Message from the Editor-in-Chief

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