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Advanced III-Nitride Technologies for Power and RF Applications: Recent Breakthroughs and Future Prospects

Guest Editor:

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Deadline for manuscript submissions:
closed (15 August 2024)

Message from the Guest Editor

Dear Colleagues,

Wide- and ultrawide-bandgap III-nitride semiconductors (GaN, $Al_xGa_{1-x}N$, AlN) exhibit remarkable properties that position them as pivotal materials in the production of next-generation power and RF electronic devices.

The focus of this Special Issue is to provide a comprehensive overview of the most recent advances in the realm of III-nitride-based semiconductors, encompassing innovative device architecture, carrier transport, and emerging trends. The scope of this Special Issue extends across a diverse array of subjects. These include but are not limited to the following areas:

- Vertical and lateral III-nitride based unipolar and bipolar devices for efficient power electronics and/or high frequency operation.
- Carrier transport: electron and hole gases, modeling, and simulation.
- Contact and gate stack engineering, novel field management designs.
- Monolithic integration of III-nitride devices in power integrated circuits.
- Reliability and thermal management of III-nitride devices.
- III-nitride devices for radiation hard electronics.

Dr. Chandan Joishi
Guest Editor

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Special Issue

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Message from the Editor-in-Chief

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