



## Advancing GaN Power ICs: Efficiency, Reliability & Autonomy

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### Abstract:

Gallium Nitride (GaN) is a next-generation 'wide-bandgap' semiconductor, replacing legacy silicon chips in power electronic systems. To maximize the full potential of GaN's superior performance traits, Navitas monolithically integrates power, drive, and control to enable up to 3 times faster charging and 3 times more power in half the size and weight for mobile fast chargers, consumer electronics, solar, data centers and electric vehicles.

Integration is key with GaN power devices due to their extremely high switching speeds and sensitive gate characteristics. The next generation of GaN power ICs enable even higher efficiency, autonomy, and reliability with precision sensing of system current, voltage and temperature with real-time control and protection. Implementing integrated loss-less current sensing, external monitoring components such as large, lossy sense resistors are eliminated, reducing system power loss, complexity and system cost.

Offering GaN's superior performance and switching speed alongside the highest level of protection and sensing, GaN power ICs can be confidently used in higher power applications with stringent regulations for efficiency and reliability, such as solar inverters, motor drives, server power, EV Onboard Chargers (OBC) and DC-DC systems.

### Curriculum Vitae :



For 30 years Dan has led R&D at semiconductor and power electronics companies at the VP level or higher. His experience includes developing advanced power device and IC platforms, wide bandgap GaN and SiC device design, IC and power device fabrication processes, advanced IC design, semiconductor package development and assembly processes, and design of electronic systems.

Before Co-founding Navitas, Dan served as VP R&D, VP Advanced Product Development, and Chief Technologist at International Rectifier (IR sold to Infineon for \$3B), and SVP Product & Technology Development & CTO at Fairchild Semiconductor (Fairchild sold to onsemi for \$2.4B).

In 2018, Dan was an inaugural inductee to the International Symposium on Power Semiconductor Devices and ICs (ISPSD) Hall of Fame.

Dan holds over 180 US patents, and a BSE degree in Engineering Physics from Princeton University.

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September 5-9, 2022  
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