

# NEEDS

## Developing products using GaN on Si Technology – Challenges and Opportunities

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Tagore Technology, Arlington Heights, IL

**2:00 PM, Oct. 26, 2018 in BRK 1001**

**Abstract-** The advantages of GaN technology for RF and Power Electronics are well documented. This talk will address the next phase of the evolution – technical and economic challenges of displacing the incumbent technology, Si, especially in the area of industrial and consumer applications.

RF applications of GaN in are more widespread than power electronics applications. Besides power amplifiers, Tagore Technology has developed very compact high power RF switches for various infrastructure applications. We will discuss GaN products/applications in the context of wideband radios, such as SDR, as well as narrow band applications such as in 5G small cells.

GaN on Si technology is emerging as a strong contender for power electronics applications in the mid voltage range (100-650V). Unlike RF, GaN is just beginning to appear in power applications. Tagore Technology has developed GaN half bridge with integrated driver to ease design of GaN into various power applications. We will highlight a few opportunities for GaN to play an important role in the near term (1-3 years).

Si technology has a history of 50+ years, but GaN products are just beginning to appear, so reliability is a key concern. We will review how the industry is addressing reliability concerns for GaN device end users.

**Amitava Das** did his Ph.D. in EE from Purdue University in 1990 under guidance of Prof. Mark Lundstrom. He has worked in various roles during his 25+ years in the semiconductor industry – first on the EE faculty at IIT-B, then as a 0.18um CMOS technology developer at APRDL, Motorola, and later as RF IC/Module Design Lead in Motorola's wireless IC design division. Amitava moved to an operations role at Motorola productizing very high-volume IC's with a global supply chain. Dr. Das co-founded Tagore Technology with Manish Shah in Mar, 2011. Tagore Technology is a venture funded fabless GaN IC company. Amitava has more than 30 papers and patents.

