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**TOPIC:**

Gallium Nitride Epitaxy on large area silicon substrates for power and optoelectronic applications

**ABSTRACT:**

GaN growth on silicon in the recent past has found enhanced interest in power and optoelectronics for its cost effectiveness. Silicon substrates are relatively inexpensive compared to sapphire and silicon carbide and offer the advantage of growth on large areas. However, growth on silicon comes with its own challenges. Substrate bow, film cracking, poor morphology, and wafer breakage are common issues that have to be overcome. The talk will present an overview of these challenges, strategies to overcome these challenges and enable growth of different device configurations. The state of the art performance achieved at IMEC in material quality, device performance, challenges yet to overcome, and future outlook will be presented.

**PROFILE:**

Dr. Saripalli completed his Ph. D. in Materials Science and Engineering from North Carolina State University, Raleigh in Dec 2005. He joined Applied Materials, Santa Clara, CA, as a senior process engineer in June 2006 leading the continuous improvement projects of PECVD of amorphous carbon films. In 2008 June, he moved to take up the role as a senior key account technologist in the GaN group leading the process and tool installs at customer sites. From Oct 2010 to June May 2012, Dr. Saripalli worked in a couple of start-ups the Silicon Valley as a senior epitaxy engineer, leading the growth efforts of III-Nitrides at low temperatures by a proprietary method. Since June 2012, Dr. Saripalli has been Principal Engineer leading the GaN epitaxy team at IMEC, Leuven, Belgium.