

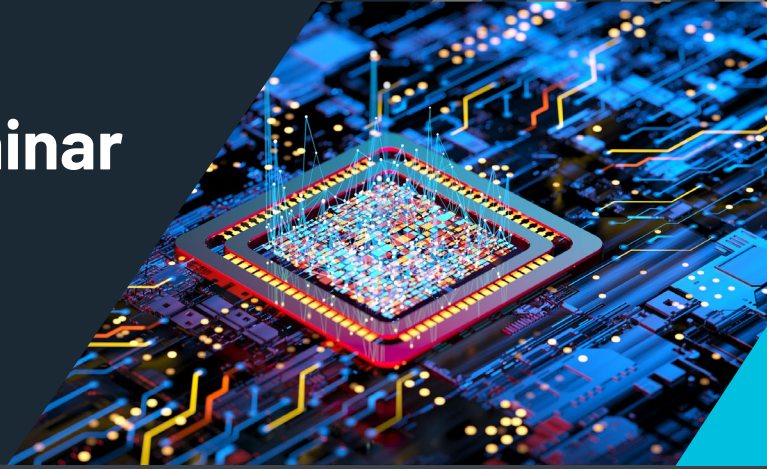
Power Semicon Seminar



25-Jun-2024 | Tuesday

9.30am - 5.00pm

AUD302, Level 3, NTU@One-north



Unleashing the Full Potential of Next Generation Semiconductor Technologies

The semiconductor and electronics market are driven by new waves in Artificial Intelligence, Mobility and Green Energy.

Artificial Intelligence has emerged as a prominent trend in technology. AI-powered laptops and smartphones have become ubiquitous, and their integration with end-users is no longer a futuristic concept but a tangible reality. This burgeoning trend has led to the development of key applications such as intelligent embedded system, high-speed data communication and power efficiency.

Power electronics is expected to be the largest and fastest growing segment of the discrete semiconductor industry, with much of this growth being driven by new energy efficiency-related applications and technologies for electric vehicles (EV), hybrid electric vehicles (HEV), energy storage applications, and even for upcoming Urban Air Mobility (UAM systems).

Many segments of electronics, including the semiconductor, computer and mobility industries, are focusing on efficiency of energy generation, transmission, and consumption. Device manufacturers have traditionally relied on silicon (Si) technology for creating many of the devices used to control motors, regulate voltages, convert power, etc. The latest trends have given rise to the development and adoption of wide bandgap semiconductor materials such as Silicon Carbide and Gallium Nitride. Their performance and reliability in both communication and power electronics present waves of challenges that require attention.

Tektronix, as a leader in the electronic Test & Measurement industry with close to 80 years of experience and leadership in partnering with key industry leaders and research institution to help bring essential technology to people who accelerate progress.

We invite you to the **Power Semicon Seminar**, designed for researchers and industry professionals interested in semiconductor and power electronics. Join us to unleash the full potential of Next Generation Semiconductor Technologies today!



Meet Our Experts



Stephen Tang



Andrew Teh



Brian (Tsz Kei) Ko

Venue:



AUD302, Level 3
 Alumni House,
 NTU@One-north (Near Buona Vista MRT)
 11 Slim Barracks Rise
 Singapore 138664

<https://go2.tek.com/as-tektronix-power-semicon-seminar-sg/>

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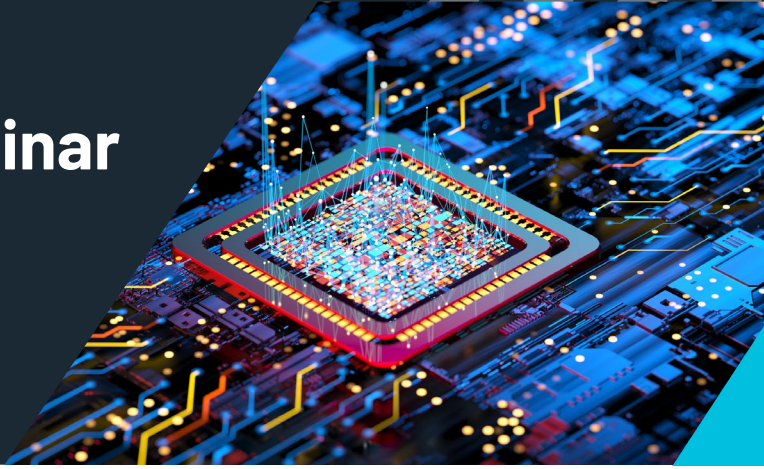
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Time	Topic
0900 - 0930	Registration
0930 - 0945	Opening and Agenda Briefing
0945 - 1015	Enabling the Semicon Technologies Validation with Tektronix
1015 - 1115	<p>Introduction to Wide Bandgap Semiconductor and GaN's Application for Artificial Intelligence and Computing</p> <p>At the forefront of revolutionizing the landscape of artificial intelligence (AI) and computing is Wide Bandgap (WBG) semiconductor technology, specifically Gallium Nitride (GaN). GaN possesses unique properties such as high electron mobility, thermal conductivity, and power efficiency, making it an optimal candidate for improving the performance and efficiency of AI systems and computational devices.</p> <p>By utilizing the capabilities of GaN-based components, such as power electronics, RF amplifiers, and optoelectronic devices, AI systems can attain unparalleled levels of speed, energy efficiency, and scalability. The integration of GaN technology also facilitates the development of compact and power-efficient computing solutions, which are essential for edge computing, IoT devices, and high-performance computing clusters.</p> <p>We invite you to join us in exploring the potential of WBG semiconductors and GaN in AI and computing through an in-depth examination.</p>
1115 - 1215	<p>Validating Intelligent System Communication for AI and Beyond</p> <p>As we transition into the AI world, power Integrity and serial decoding plays an important role in the development of key applications such as intelligent embedded system, high-speed data communication and power efficiency.</p> <p>Power integrity is important in maintaining the quality of today's high speed and embedded design. However, as data rates have grown faster, challenges for Power Integrity Measurement arise.</p> <p>Join us to understand the common problems of Power Integrity and the instrumentations needed to perform your power integrity measurements.</p>
1215 - 1300	Lunch Break
1300 - 1400	<p>Validating Wide Bandgap Semiconductor Power Conversion Systems</p> <p>Two of the most sought-after Wide Bandgap (WBG) technology devices in the market today are Silicon Carbide (SiC) and Gallium Nitride (GaN). These devices are essential for evaluating and optimizing the switching behavior of MOSFETs or IGBTs.</p> <p>In this session, you will:</p> <ul style="list-style-type: none"> - Gain insight into the difference between Dynamic vs. Static Measurement - Acquire knowledge on how to conduct precise measurements using the appropriate instrumentation and setup, crucial in ensuring a faster time to market for your power conversion designs.
1400 - 1500	<p>How to Test EV Batteries with Accuracy, Efficiency and Speed</p> <p>In today's increasingly mobile world, batteries have become an integral part of our daily lives. They power everything from security cameras to computers, drones, and even buses.</p> <p>To ensure optimal performance, batteries are subjected to precise and efficient testing protocols. This includes discharge and charge testing to determine capacity and state of health, as well as highly dynamic testing to assess power demand response.</p> <p>This session will highlight the use of programmable DC bi-directional power supplies to replicate actual driving scenarios, emphasizing the critical grading phases in Lithium-ion battery production. Stay ahead in the booming EV market by maximizing battery performance and reliability through the latest advancements in EV battery testing.</p>
1500 - 1530	Break and Demo Booth
1530 - 1630	<p>Wide Bandgap Semiconductor: From Materials Research to Failure Analysis</p> <p>Explore the potential of Wide Bandgap Semiconductors (WBG) and their transformation from a research concept to practical application in various industries.</p> <p>The seminar delves into the unique properties of materials such as silicon carbide (SiC) and gallium nitride (GaN), which can enhance the efficiency and performance of various systems. Gain an in-depth understanding of the manufacturing process of these materials and the significance of effective testing.</p> <p>Join us for an enlightening experience as we unveil the possibilities and underlying principles of Wide Bandgap Semiconductors.</p>
1630 - 1700	Closing Remarks and Event Ends

NOTE: Seminar seats are limited, and priorities will be given to relevant professionals.