

# SiC-Enabled Solutions for Next Generation EVs

## SPEAKERS



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## SUMMARY

How we have addressed the issues of the SiC supply chain and manufacturing quality to provide assurance of resilient supply with low PPM rates and cutting edge SiC technology to the automotive industry.

## ABSTRACT

Silicon Carbide MOSFETs have emerged as a key enabler for next generation electrified powertrains. Before the entitlement of this technology can be achieved, there are key challenges that need to be addressed in terms of cost, reliability, supply assurance, packaging, and high-volume manufacturing. The first half of this session focuses on how onsemi's EliteSiC products leverage high performance, robust SiC technology on a completely vertically integrated manufacturing platform to deliver the power semiconductor components needed to realize the full potential of future powertrain systems.

At the system level, a more holistic chip2system approach is needed when optimizing a solution for the end application. Some of the concerns with current device and packaging technologies, like sintering SiC devices to heatsinks, for example, not only add more material cost, but also high manufacturing costs by requiring tighter tolerances and specific metallization and surface finishes for the chip, package and heatsink. This is a result of ever-increasing demand for systems with higher power density, better reliability and lower \$/kW metric. To significantly improve these metrics, it is necessary for semiconductor suppliers to look at the problem from a total system viewpoint. The second half of this session focuses on new concepts, materials, and manufacturing processes for a truly optimized solution from chip2system.

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At Onsemi, we're always looking for champions ready to drive meaningful progress. We seek people who are smarter than us. That's how we create a company of high-performance innovators that advance intelligent technology for a better future - for the planet, for our communities and our people.

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