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# The retreat of the MOSFETs?

When I met with EPC's CEO Dr. Alex Lidow at PCIM he said "MOSFETs have already retreated out of 200 V and 100 V, and now they've started to retreat out of 40 V, 25 V and 15 V all the way down to zero." OK, he needs to market the GaN devices of his company, but the basic tendency cannot be neglected: GaN devices are conquering more and more terrain that was formerly a pure domain of Silicon MOSFETs.

Exactly one week later I visited the Vienna Motor Symposium, where I listened for example to a presentation on the new EV powertrain architecture at Mercedes. This MMA architecture (Mercedes Modular Architecture), which provides an exceptionally high range, uses silicon carbide (SiC) power transistors in its inverter.

Volkswagen also gave a glimpse into its APP350 powertrain platform, where they use SiC MOSFETs at inverter switching frequencies of more than 100 kHz reaching efficiencies of 97 to 99 %. Even though the module costs are about 250 to 400 % higher than with Si IGBTs they decided to use these WBG semiconductors. "Despite increased complexity and costs, SiC is a strategic enabler for meeting the APP350's efficiency targets", said Dr. Henning Wöhl-Brunn, Volkswagen. He commented that VW will introduce this powertrain technology in 2026, but he also disclosed that "the step towards Gallium Nitride is very interesting" and that his team is "watching this very closely".

At the same event, BorgWarner described how its inverter solutions use 1200 V SiC modules, but for its 800 V inverters the company is also investigating the usability of GaN. According to Dr. Matthias Strassburg, BorgWarner does not consider vertical GaN to be an appropriate solution for this application.



These are just some examples where WBG semiconductors have arrived in the automotive mass markets, and in terms of automotive usage, WBG is just at the beginning. I am very confident that we will also hear about automotive solutions at Bodo's WBG event. I recommend marking December 2 & 3, 2025 in your calendar and to check out [www.bodoswb.com](http://www.bodoswb.com).

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**My green tip of the month:**

There is a high probability that we will see many interesting electric vehicle introductions next year. If you intend to buy a car in the near future, you might think about choosing an electric vehicle (EV) and to recharge it with "green" electrical energy.

*Alfred Vollmer*

## Events

**CWIEME Berlin 2025**

Berlin, Germany June 3 – 5  
<https://berlin.cwiemeevents.com>

**Battery Show Europe 2025**

Stuttgart, Germany June 3 – 5  
[www.thebatteryshow.eu](http://www.thebatteryshow.eu)

**PEMD 2025**

Turin, Italy June 11 – 12  
<https://pemd.theiet.org>

**GPECOM 2025**

Bochum, Germany June 11 – 13  
<https://gpecom.org/2025>

**ITEC 2025**

Anaheim, CA, USA June 18 – 20  
<https://itec-conf.com>

**ISIE 2025**

Toronto, Canada June 20 – 23  
<https://ieee-isie-2025.org>

**3D-PEIM 2025**

Golden, CO, USA July 8 – 10  
[www.3d-peim.org](http://www.3d-peim.org)

**PEDS 2025**

Penang, Malaysia July 21 – 24  
<https://ieee-peds.org>

**EMC+SIPI 2025**

Raleigh, NC, USA August 18 – 22  
<https://emc2025.org>