



AB Volvo

Press Information

Volvo invests in conductor technology for hybrid vehicles

Semi-conductor material silicon carbide is one of the hottest substances today in the world of research into hybrid vehicles. Volvo Technology Transfer is now investing in a company that has developed an energy-efficient conductor made of silicon carbide.

The conductor is used, among other things, when battery direct current is converted into alternating current in an electric motor. The basis for today's technology is semi-conductors made of silicon, which however has the disadvantage that it can withstand neither high temperatures nor high electrical voltages.

One-year-old company TranSiC AB, in which Volvo Technology Transfer (VTT) is now investing, has developed a new conductor based on silicon carbide. The substance is as hard as a diamond and is used, for instance, in angle-grinding discs. One major advantage is that silicon carbide can withstand extremely high temperatures.

“One problem with electric hybrid vehicles is that they often require cooling of both the motor and the electronics,” says Anders Kroon, head of hybrid technology at Volvo Group. “With silicon carbide, the heat losses are small so perhaps no cooling will be needed.”

Another advantage with silicon carbide is that the vehicle's electronics can be made far smaller and much more compact. This in turn makes the entire vehicle lighter and cheaper. A current PhD thesis within Volvo is studying silicon carbide and its applications in hybrid vehicles. Hybrid technology is of considerable interest to vehicle manufacturers throughout the world. The same applies to VTT, which has accordingly invested in TranSiC AB.

“We are focusing early in the process on companies that can provide a good return and that can be of benefit to the Volvo Group,” says Johan Carlsson, who headed the move to invest in TranSiC.

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