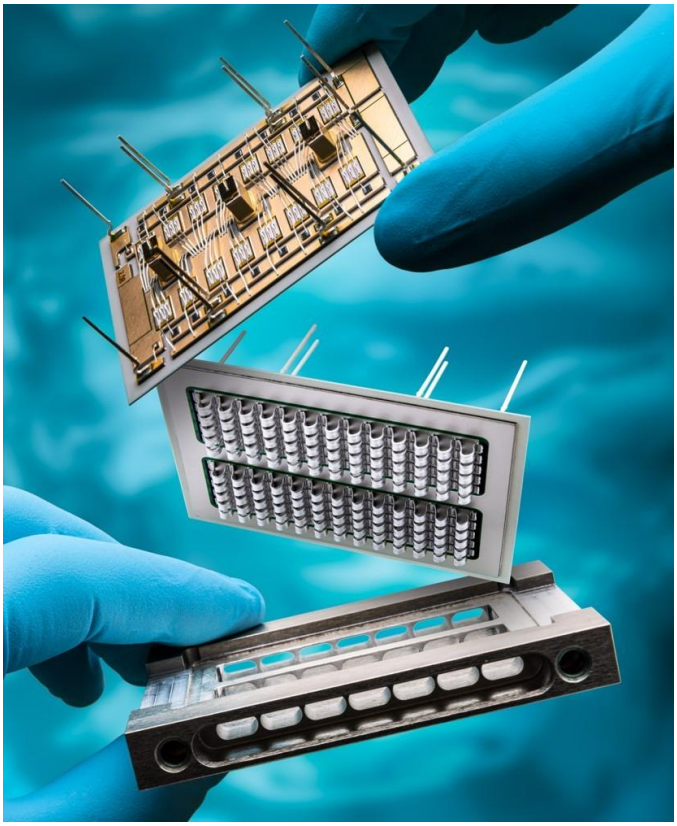
Magneti Marelli: Enhanced Direct-cooling Inverter SiC PM (2016)

Project

In comparison to a Silicon-based design of the same rating, the new technology enables conversion efficiencies of up to 99.5%, 50% reduction in weight and size and 50% higher heat dissipation into cooling system.
Funding: direct industrial R&D project
More here: Marelli or IZM

Structure of the power module



Case SiC PM with advanced cooling

- 8x 25mm2 SiC MOSFETs/switch at 800V
- dies are sintered on SiN AMB
- substrate is directly cooled
- Intelligent direct cooling implementation
- AlSiC water dust
- Primary DC link capacitor inside the PM

Performed tasks

- die sorting
- QC during manufacturing
- static electrical tests (Keysight B1505A)

Final power module

