

WInSiC4AP and More than Moore

(Antonio Imbruglia - ST)

ST has been working with Silicon Carbide since 1996. Introducing a new technology in a semiconductor market demanding high quality, long lifecycles at competitive costs is demanding. ST overcame the challenges of the industrialization of this wide bandgap material and started to produce its first SiC diodes in 2004. In 2009 ST started to produce its first SiC MOSFETs and since then we have added 1200V versions of both SiC MOSFETs and power Schottky diodes to complement the original 650V versions.

The supply chain for SiC is becoming more robust, the cost of the basic material is decreasing as supplier competition increases. ST has worked hard on the quality of the material and process improvement. As the material and the products based upon SiC technology became more robust ST created automotive-grade SiC power devices that are becoming a key enabler in vehicle electrification.

ST's 6" SiC wafer production started in 2017, with the ramp-up of production helping to drive down costs and increase supply for the ever increasing list of SiC applications, including more solar inverters, industrial motor drives, home appliances, and power adapters.

In this successfully story and following the path of More than Moore graph ST joined funded project WInSiC4AP in June 2017 with the scope to be Scientific Responsible, participating with many R&D teams for bricks development, front-end, package and system applications. Chips and modules supply for the demonstrators.