Wide Bandgap Device Technology for Power Efficient and High Temperature Applications

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The rapid electrification of our society is in full swing. The need for better energy efficiency is urgent. The progress in the development of emerging new device technologies is very promising. Semiconductor materials with wide bandgap are maturing fast. Both gallium nitride (GaN) and silicon carbide (SiC) devices are today to be found in several commercial applications such as power supplies for computers and charging equipment for handheld units. High power applications are also rolling out for automotive industry and EV charging networks. Yet, much more development is needed and expected. The material quality is far from perfect, but promising. This talk will focus on the current status and projections on high voltage SiC and GaN device technology for the electrical infrastructure and promising high temperature applications. A brief presentation regarding the activities for the EU Chips JU Pilot Line 4 will be included.