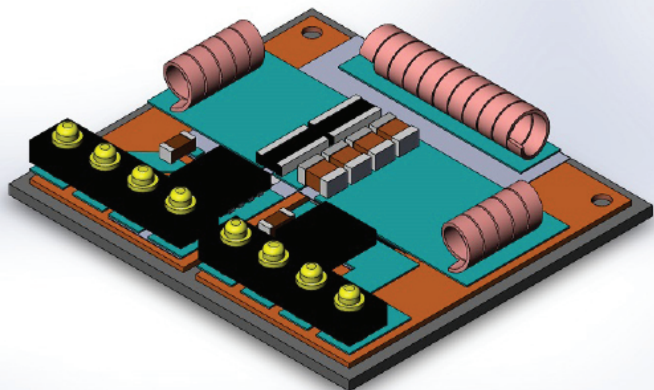


SiC-halfbridge 1200 V, 5 kW, 250 kHz pulse frequency

WORKSHOP PROFILE

In recent years the importance of packaging technology has grown in proportion with the ongoing rise in current-carrying capacity, the increase in voltage, and the acceleration in switching speed of power electronic components.

In the end, it was not the properties of silicon, that is, the electronic switch, but the properties of the structures connecting the switch with the outside world, that were determining the electronic parameters of power-electronic semiconductor systems.

Consequently, research and development around the world began working on new packaging designs for various power-electronic applications and transferring these into actual systems. However, during this work, it often became apparent that many of the developed ideas were either extremely application-specific solutions or did not have the overall robustness needed for the harsh operating conditions of power electronics.

Fraunhofer IZM's power embedding concept, which we originally developed for microelectronic applications with very high packaging density, is an exception to the above challenge. Our new technology is not only easy to produce, but also makes extremely reliable solutions possible.

REGISTRATION

Please register by June 17th, 2014 at the latest by our web tool: **www.izm.fraunhofer.de/powerembedding**

Contact: Georg Weigelt | Phone: +49 30 46403-279

Fax: -650 | georg.weigelt@izm.fraunhofer.de

PARTICIPATION FEE

495,00 € per person (incl. evening event)

The fees are VAT exempt according to § 4 No. 22 UStG.

VENUE

Fraunhofer-Forum Berlin im SpreePalais

Anna-Louisa-Karsch-Str. 2, 10178 Berlin, Germany

WHO SHOULD ATTEND?

The workshop is aimed preferably at R&D suppliers for original equipment manufacturers as well as developers and electronic packaging specialists who own the responsibility for manufacturing and/or are involved in or supervise decision-making processes during product development and quality assurance.

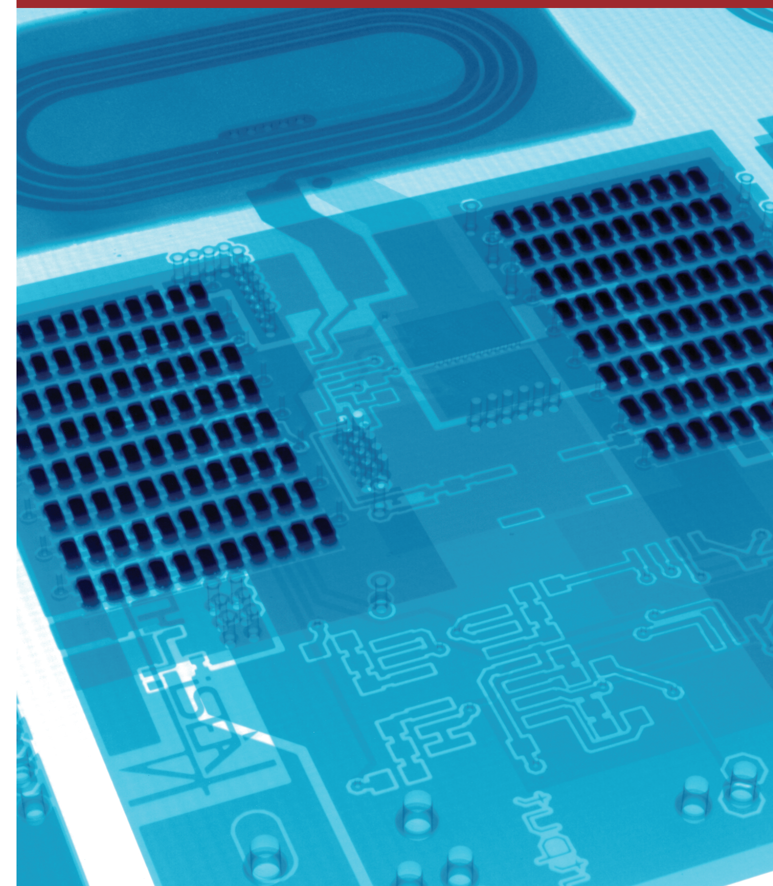
Supported by

Fraunhofer

IZM

WORKSHOP: BERLIN, JULY 2ND, 2014

POWER EMBEDDING



DON'T MISS OUR EVENING-BEFORE EVENT ON JULY 1ST WITH THE OPPORTUNITY TO MEET OUR EXPERTS AND ENJOY THE INSPIRING CITY OF BERLIN !

AGENDA

July 1st, 2014

19.00 **Evening-before event**

July 2nd, 2014

9.00 **Registration**

10.00 **Welcome**
Dr. Stephan Guttowski, Fraunhofer IZM

10.15 **European competence in electronic packaging**
Rolf Aschenbrenner, Fraunhofer IZM

10.45 **Coffee break**

CONCEPT & DESIGN

11.00 **Review and state-of-the-art in power packaging**
Development and global status of embedding technology, embedded power electronics in production today, future trends
Andreas Ostmann, Fraunhofer IZM

11.30 **Design requirements and opportunities for power modules**
New opportunities to rethink the classical packages for power semiconductors. What is needed and can generate benefit on system level?
Dr. Eckart Hoene, Fraunhofer IZM

12.00 **Lunch**

EMBEDDING - MATERIALS & PROCESS

13.30 **Polymer substrates for power applications**
Market overview HT substrates, polymer classes used for substrate manufacturing, substrate property changes after thermal and media storage
Karl-Friedrich Becker, Fraunhofer IZM

13.50 **Wafer metallization for power embedding**
Metallization requirements, wafer level metallization process and challenges, how to get chips ready for embedding
Thomas Fritzsch, Fraunhofer IZM

14.10 **Laminate based embedding of power semiconductors – Requirements and technology**
Overview embedding for power semiconductors, requirements on semiconductors and materials, detailed technology description, application examples
Lars Böttcher, Fraunhofer IZM

14.40 **Coffee break**

APPLICATIONS

15.00 **Examples for recent embedded power modules**
Packages for highest switching speed, high current, low cost
Dr. Eckart Hoene, Fraunhofer IZM

15.30 **Embedded component modules in production, today**
Snapshot of products and capabilities available in mass production, overview of the next generation products already in qualification
Mark Beesley , AT&S Austria Technologie & Systemtechnik Aktiengesellschaft

16.00 **Questions, disussion and feedback**
Dr. Stephan Guttowski, Fraunhofer IZM

16.30 **End of workshop**

Cover: Photovoltaic converter with embedded IGBT (TU Berlin)