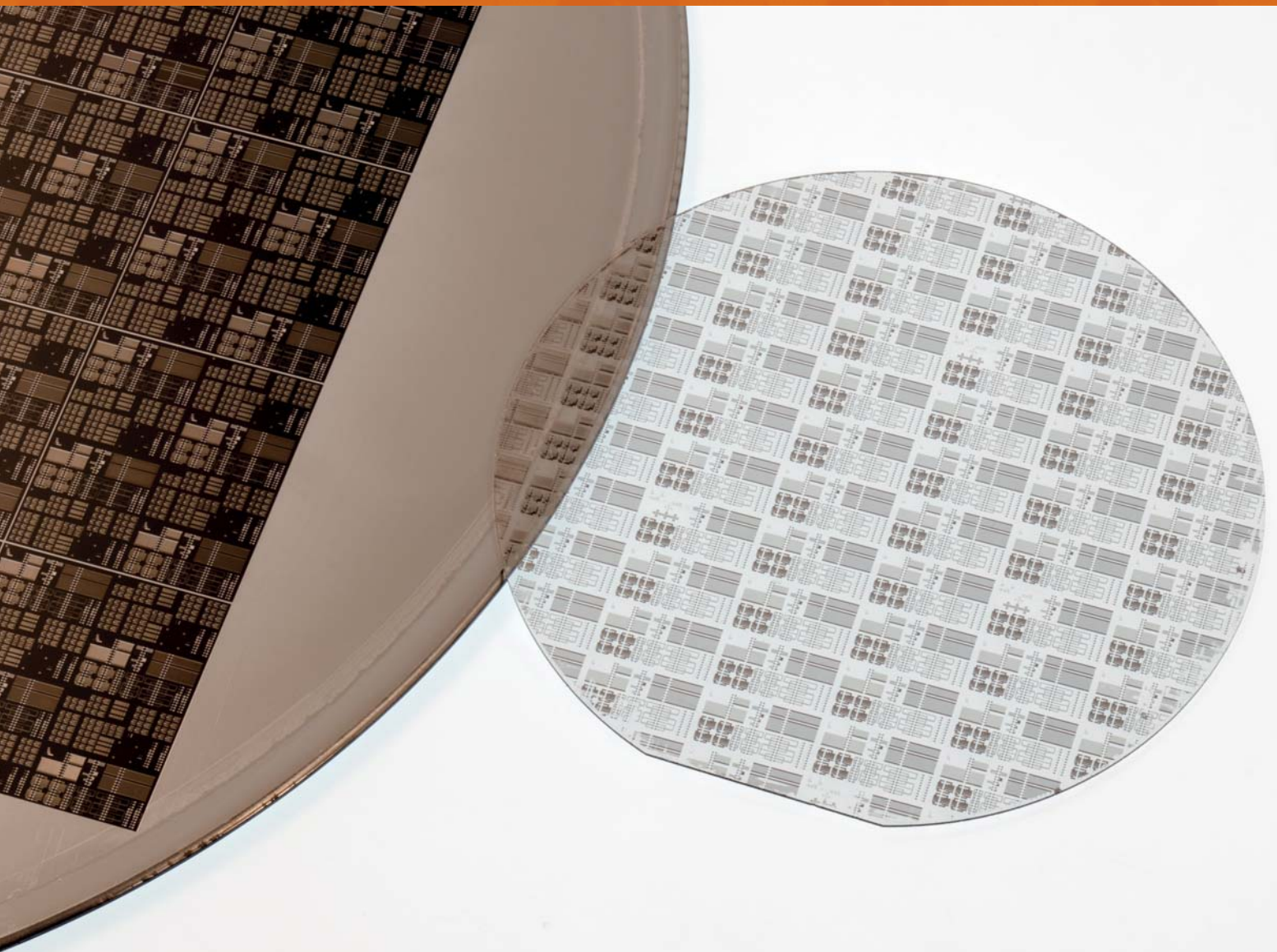


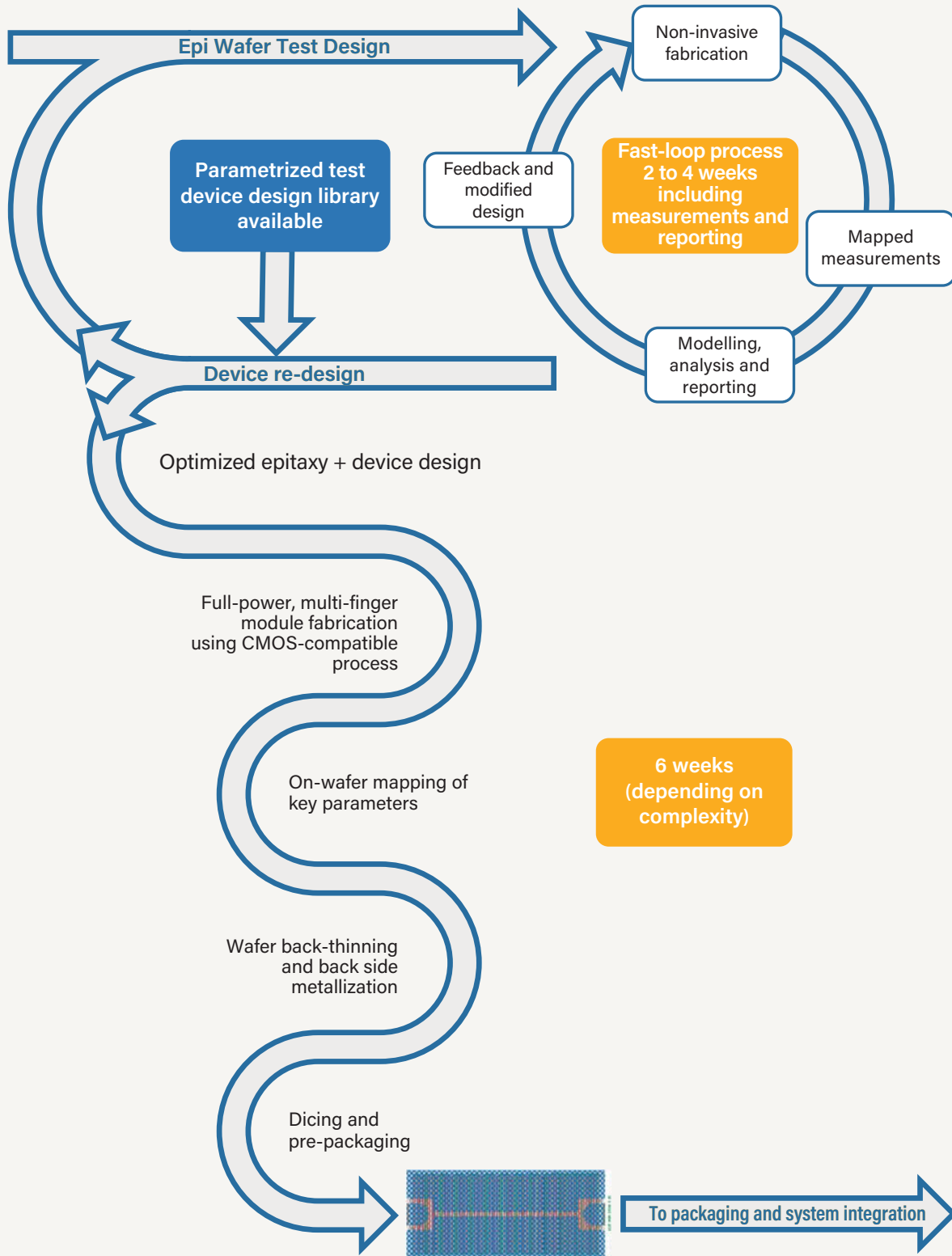


# GaN for power electronics:

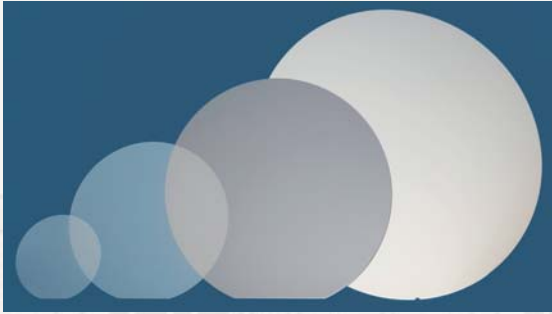
Design, fabrication and characterization services



# The GaN Fast Loop Service: Your shortcut from Epi to prototype

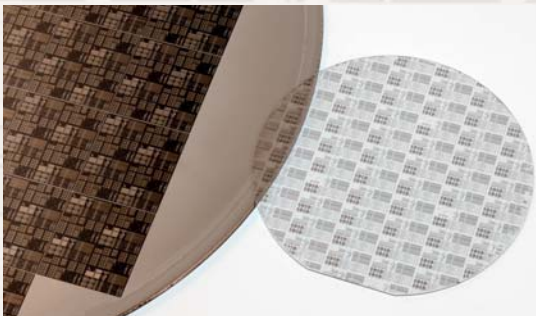


# Flexible wafer processing



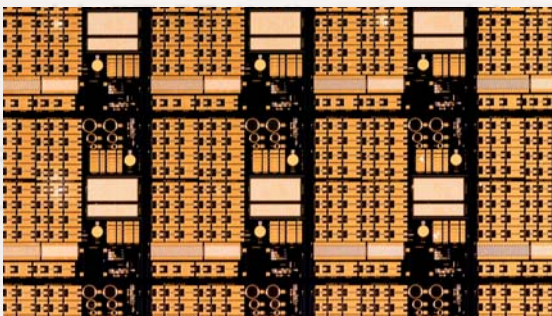
GaN on different wafer sizes and substrate types

- The GaN processing capability at IMS CHIPS can handle GaN wafers from 2-inch up to 8-inch
- Processing technology for standard as well as novel substrate types (Si, SiC, Sapphire and Bulk GaN)
- 6-inch and 8-inch GaN-on-Silicon wafers make full use of the CMOS pilot line capabilities at IMS CHIPS



6" GaN on Silicon and 2" Bulk GaN wafers processed at IMS CHIPS

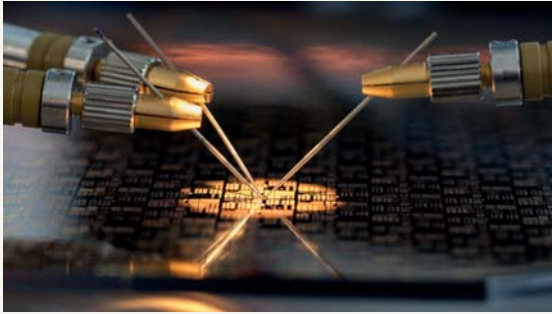
- The process follows the gold-free, CMOS compatible fashion
- Ondemand wafer processing in gold-based III-V technology
- A full palette of processing modules is available for etching, metalization and passivation, which can also be customized depending on the wafer type, size and epitaxial structure



Design layout can contain standard PCM structures side by side with complete power HEMT modules

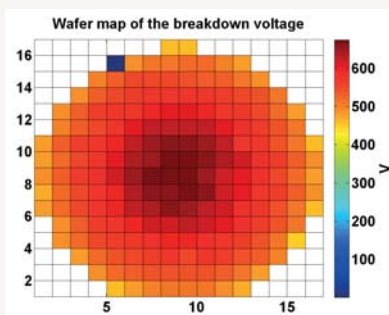
- Stepper lithography and contact lithography are utilized in standard processing
- Maskless direct laser lithography enables design prototyping
- Flexible parametrized layout design libraries enable fast adoption of custom designs

# Characterization to enhance your GaN

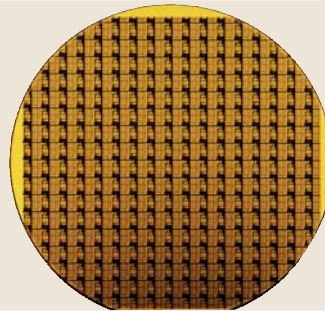


Inline fully-automated characterization of high power HEMT devices

- Inline measurements enable robust single process monitoring of full wafers up to 8-inch up to 1 kV
- Measurements include DC, Pulsed and CV measurements on fully or partially processed wafers
- The inline measurement capability enables a process and measurement routine to be designed and for studying a certain aspect in the device or the epi-layer quality
- Fully-automated measurement routines enable efficient full wafer mapping of key device parameters

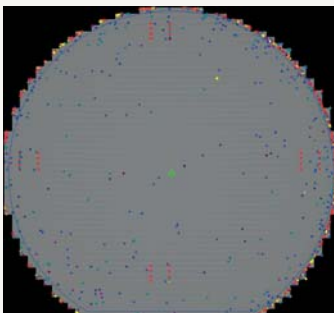


Automated full wafer maps generation



6-inch fully-processed GaN-on-Silicon wafer

- Custom data acquisition software to organize and sort large data sets
- Reliable data analysis algorithms enable robust extraction of relevant parameters
- Insight comprehensive data interpretation provides in-depth correlation to the epitaxial material properties and its effect on the final device performance
- Detailed reports presenting statistical summaries offer a fast but yet comprehensive feedback



Optical defect imaging and characterization

- Prior to processing, the wafer is mapped for bow and visible defects
- Defects can be categorized by shape and size
- Defect correlation to electrical parameters is established





The Institut für Mikroelektronik Stuttgart (IMS CHIPS) is a non-profit research organization that develops and manufactures innovative customer-specific products in microelectronics, micro-systems and optical systems. The focus is on CMOS circuits, GaN for power electronics, specialized silicon processes, e-beam nano structures and optical sensors.

IMS CHIPS offers:

- Design and technology competence in micro electronics, microsystem technology & nano structuring
- Research, development & production for SMEs and large enterprises
- Scientific collaboration with universities & research facilities
- IECQ and ISO 9001 certification in manufacturing and development

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