

OKMETIC



**TAILORED
SOLUTIONS
FOR GAN-ON-SI
APPLICATIONS**

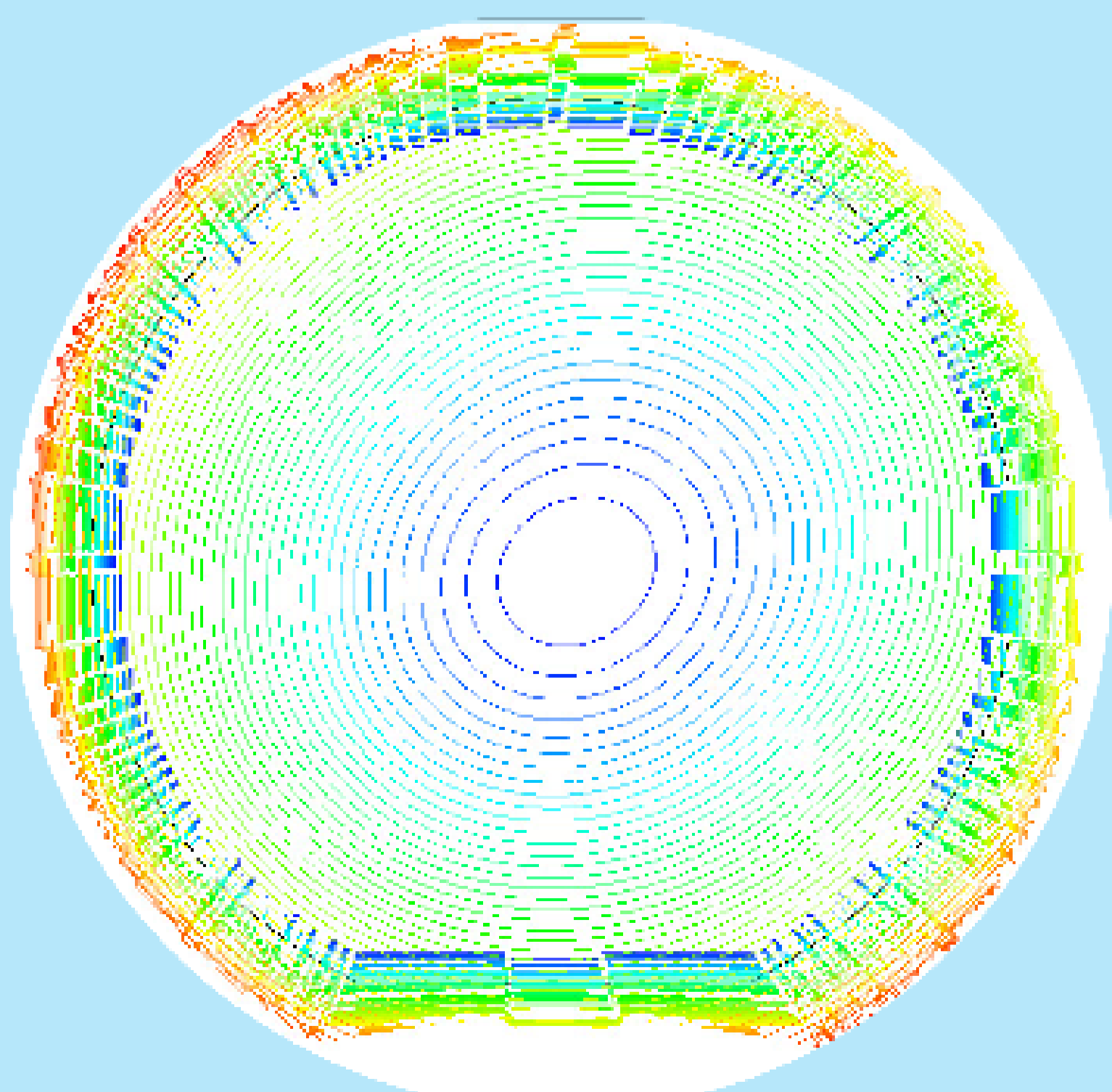
SILICON WAFERS ENABLING SMOOTH GAN-ON-SI EPITAXY

SILICON WAFERS DESIGNED FOR GAN-ON-SI APPLICATION NEEDS (POWER & RF)

- Silicon wafers that are designed to facilitate the growing of high-quality gallium nitride and to offset the extreme stresses of the GaN epi process.
- Okmetic technology was developed in close co-operation with several industrial players utilizing all the widely used GaN production processes.
- Customized wafers simplify the epitaxial process setup, tuning and ramping-up to production.
- Full wafer shape analysis is available as part of the wafer tailoring.

WIDE SELECTION OF WAFER PARAMETERS TO MATCH YOUR APPLICATION NEEDS

- Custom wafer thickness options to reduce wafer bow and warpage (150- 200mm up to 1,150 μ m).
- LTO option for the back surface for further stress management.
- Option for up to $\geq 7,000$ Ohm-cm resistivity with suitable O_i control, balancing between resistivity stability and lattice integrity.
- Option for high resistivity on-orientation $\langle 111 \rangle$ with tight orientation control.
- Also SOI wafers can be used as GaN-on-Si substrates for instance in building new HEMT devices (High-Electron-Mobility Transistor).



SUPERIOR PERFORMANCE

Okmetic GaN-on-Si optimized wafers have consistently shown superior performance in GaN-on-Si epitaxy. During the GaN epi process, wafer curvature is monitored and controlled. Okmetic wafer bow returns close to the initial stage after GaN stack deposition process. This is illustrated on the left in the gematrical mapping of Okmetic Si substrate processed into a GaN-on-Si wafer at Aalto University.

