

# microPRO™ XS OCF

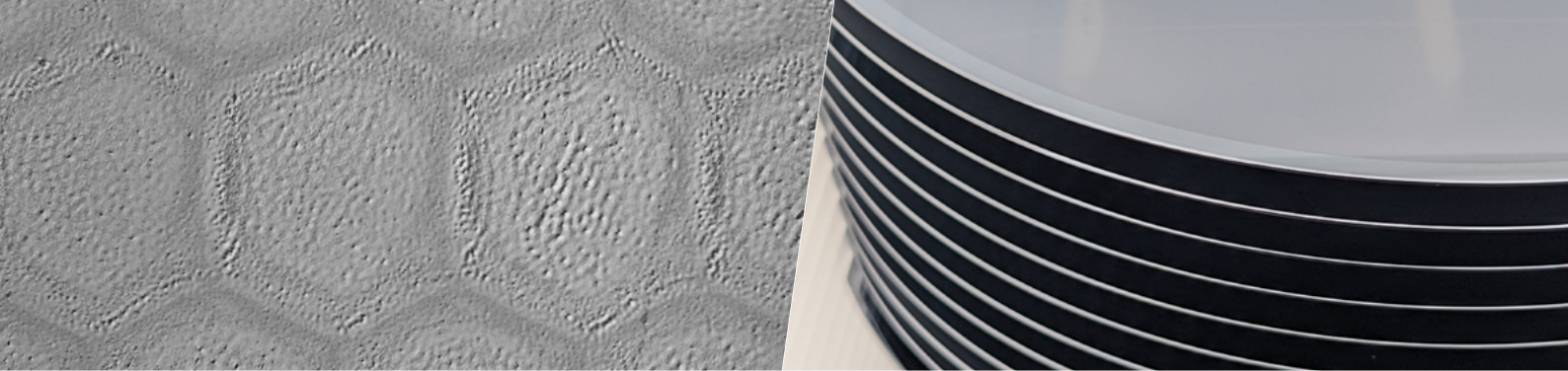
## HIGH-SPEED UV LASER ANNEALING FOR OHMIC CONTACT FORMATION

3D-Micromac's microPRO XS OCF system provides laser annealing with high repeatability and throughput in a versatile yet robust system. Combining a solid laser optic module with a modular processing platform, the microPRO XS OCF is ideally suited for ohmic contact formation (OCF) for power devices based on silicon carbide. Sophisticated process routines and an optimized chamber layout reduce particle generation. Individual adjustable laser spot profiles enable the processing of different material compositions.

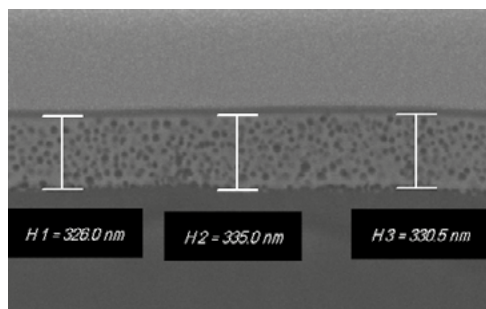
### HIGHLIGHTS

- Best-in-class throughput (up to 22 WPH / 6" wafers)
- Excellent  $R_s$  homogeneity ( $\delta < 1.1\%$ )
- 6" and 8" wafer processing without stitching - no need for tool adaption
- Ultra-thin wafer handling available
- Small footprint
- Fully automated beam stabilization





## microPRO™ XS OCF - SYSTEM CONFIGURATION



FIB cut showing the homogenous distribution of C in  $Ni_xSi_y$

### BENEFITS

- Recipe control to achieve different  $Ni_xSi_y$  phases and thicknesses
- Freely programmable geometry for test patterns
- Wide and stable process window
- Variable laser spot profiles for the processing of different material compositions
- Semiconductor mass production proven
- Comprehensive range of services available, including feasibility studies, recipe development, contract manufacturing, pilot production and global customer support

|                                |                                                                                                                                                                                                                                                                              |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suitable for                   | Ohmic contact formation (OCF) for power devices                                                                                                                                                                                                                              |
| Substrate                      | <ul style="list-style-type: none"> <li>• Wafer materials: SiC, GaN, GaS, and others</li> <li>• Wafer diameter: up to 200 mm</li> <li>• Wafer thickness: down to 40 <math>\mu m</math></li> <li>• Capability for wafers on glass carrier</li> </ul>                           |
| Laser source and beam delivery | <ul style="list-style-type: none"> <li>• ns UV DPSS laser</li> <li>• Variable laser spot profile</li> <li>• Galvo scanning device</li> <li>• Fluence on wafer level: 0.5 ... 6 J/cm<sup>2</sup></li> <li>• Integrated monitoring of laser energy and beam profile</li> </ul> |
| Handling                       | Fully automated wafer handling - ultra-thin wafer approved <ul style="list-style-type: none"> <li>• Open cassette or SMIF pods</li> <li>• ID Reader for wafer and/or cassette</li> <li>• Automatic wafer alignment</li> </ul>                                                |
| Process chamber                | Recipe controlled process environment <ul style="list-style-type: none"> <li>• Nitrogen, air, others on request</li> <li>• O<sub>2</sub> concentration monitoring</li> </ul>                                                                                                 |
| Standards                      | <ul style="list-style-type: none"> <li>• Compatible with common SEMI standards</li> <li>• CE / UL / KC conformity</li> <li>• Laser class 1</li> <li>• SECS/GEM implementation (on request)</li> </ul>                                                                        |
| Footprint                      | <ul style="list-style-type: none"> <li>• 1,340 x 3,165 mm<sup>2</sup> including handling</li> </ul>                                                                                                                                                                          |



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