BAY UNION
北聯研磨科技

SiC / Si wafer grinding wheels

SiC / Si WAFER GRINDING SOLUTION

奈米精度中你最安心的合作夥伴

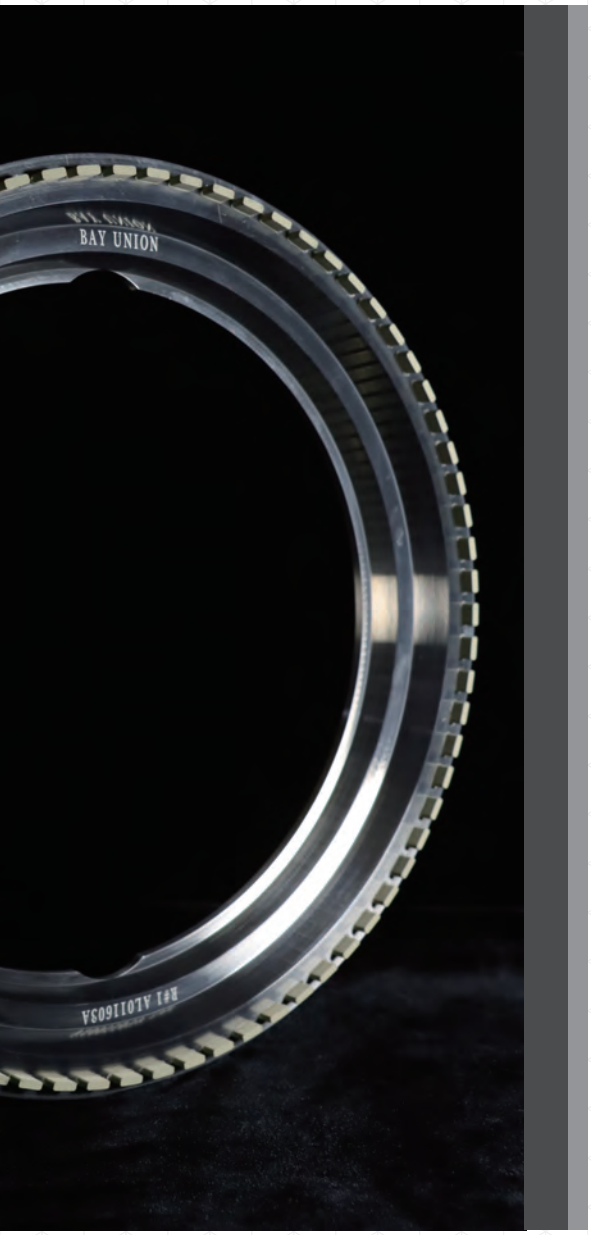
www.bayunion-tech.com

北聯研磨科技
股份有限公司

BAY UNION ABRASIVE TECHNOLOGY CO., LTD.

We believe that helping partners achieve their goals
makes the world a better place.

我們相信，成就彼此能讓世界更美好。

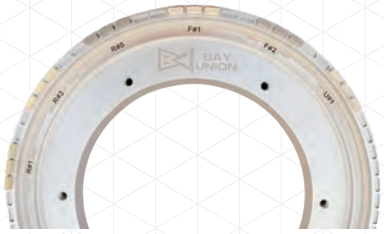


SiC chips are made from 4H single-crystal Silicon Carbide. They have many outstanding properties, including high-efficiency power conversion and the ability to handle high voltage and high power applications. This gives them significant advantages in high-temperature and high-pressure environments, such as in electric vehicles, 5G and satellite communications, and industrial applications.

SiC wafers are thinned through processes such as grinding, lapping, and chemical mechanical polishing (CMP) to achieve specific thicknesses (<200um / 350um / 500um) for different applications. This thinning improves thermal dissipation, reduces the weight of the chip module, and enhances chip performance, thereby meeting various application needs.

Bay Union offers a range of standardized thinning wheels, from #2000 coarse grinding to #30000 ultra-fine polishing, paired with various thinning machines to achieve high GR (grinding ratio) and long-lasting wheel performance. Additionally, for high-hardness P-grade SiC wafers, we have designed high-cutting-efficiency wheels to achieve rapid thinning.

SiC / Si wafer grinding wheels



Grinding Wheel	Application	Cutting force	Service life	Ra(nm)
RG#1	Silicon thinning + back grinding	**	***	< 20
RG#3	SiC thinning : coarse grinding	***	**	< 15
RG#5	Silicon reclaimed wafer grinding	****	****	–
FG#1	SiC thinning : fine grinding (low warpage)	**	***	< 5
FG#2	SiC thinning : fine grinding (high warpage)	***	**	< 5
UG#1	SiC ultra-fine polishing	*	**	< 2

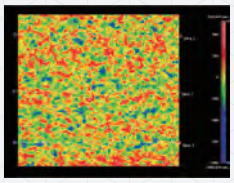
Optimize the grinding process

Surface-roughness Improvement

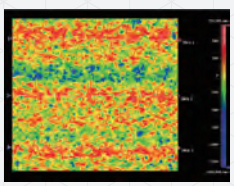
Before

As-cut

D Grade 6-inch N-type SiC Wafer



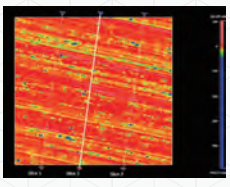
Si-side
Sa 132.319 nm
Sq 167.848 nm
Sz 1664.498 nm



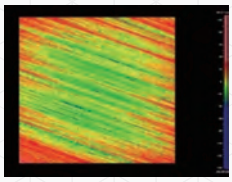
C-side
Sa 164.717 nm
Sq 208.562 nm
Sz 2075.281 nm

After Rough Grinding

#RG Grinding wheel

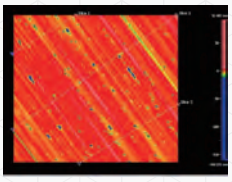


Si-side
Sa 7.135 nm
Sq 12.496 nm
Sz 599.112 nm

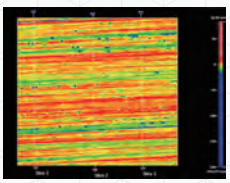


C-side
Sa 11.955 nm
Sq 15.346 nm
Sz 258.953 nm

#FG Grinding wheel



Si-side
Sa 1.390 nm
Sq 3.354 nm
Sz 251.733 nm



C-side
Sa 4.554 nm
Sq 6.502 nm
Sz 285.063 nm

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