38- 8　Ultra-smoothness Grinding of Silicon Carbide in Depth of Cut of 1mm

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To machine the ceramic component of high quality by low productive cost, the high productive ultra-smoothness grinding technique of the fine ceramics has been strongly required. To improve the productivity, in our previous researches, the newly devised ultra-smoothness grinding method is proposed and ascertained to be useful for finishing to the ultra-smoothness surface below 30nm (Rz) or 5nm (Ra).

In this research, the influence of depth of cut on ultra-smoothness grinding of silicon carbide is examined. The depth of cut ranges from 5 micro-m to 1mm.　The fGn and fp used are 10micro-m/rev and 10 micro-m /pass. The specification of metal bond diamond wheel used is the grain size of #140 and the concentration of 50. The observation and roughness measurement of the ground workpiece surface are done with Nomarski microscope and SEM, and with the surface interferometer (WYKO TOPO-3D), respectively.

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