Micropatterned Silica Films with Nanohydroxyapatite for Y-TZP Implants

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Appendix

Number 1

The characteristic strength represents the stress level at which 63.2% of the specimens will fail, and the Weibull modulus reflects the structural reliability of the specimens tested. A high Weibull modulus indicates that there was low variation in the strength data, and therefore, the mechanical behavior of the ceramic implant will be more predictable.

Number 2

It is important to note that strength values obtained in the current investigation (varying from 519 to 559 MPa) were relatively low compared to those reported for this type of Y-TZP in the dental literature[1]. It is believed that multiple factors acted synergistically to decrease the zirconia strength values, such as the relatively rough surface finish of the as-sintered surfaces (no polishing was performed for the sake of reproducing a clinically relevant implant surface), the slow loading rate used (0.5mm/min) and the test configuration, since four-point bending results in a larger stressed area compared to other tests.

1. Borba, M., et al., *Effect of the microstructure on the lifetime of dental ceramics.* Dent Mater, 2011. **27**(7): p. 710-21.