

Supplementary Material

Recycling of Dental Zirconia into CAD/CAM Systems for Potential Industrial Applications

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Figure S1. Dental zirconia waste. On the left, two bags containing approximately 20 kg of zirconia powder, each were collected during milling process through a vacuum collector. On the right, fractured remaining blocks. These photos were obtained from Biometika® digital dental lab.

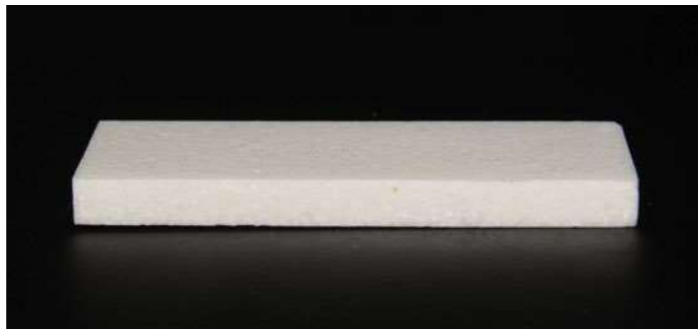
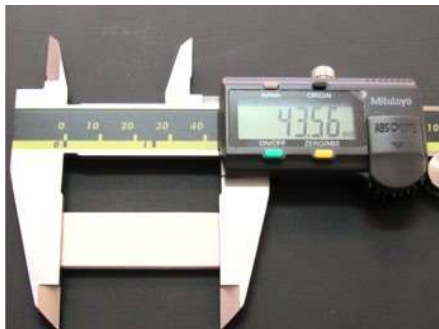


Figure S2. Rectangular specimen made of recycled zirconia.

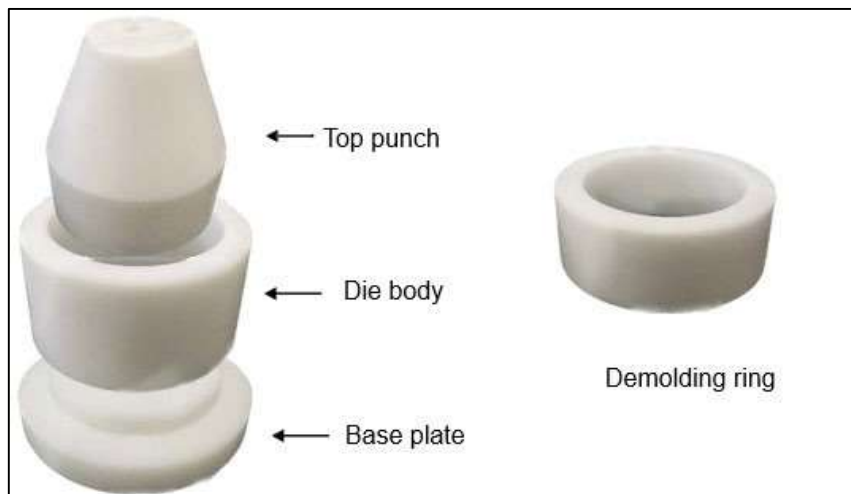


Figure S3. Mold made of POM that shaped compressed recycled powders into blocks

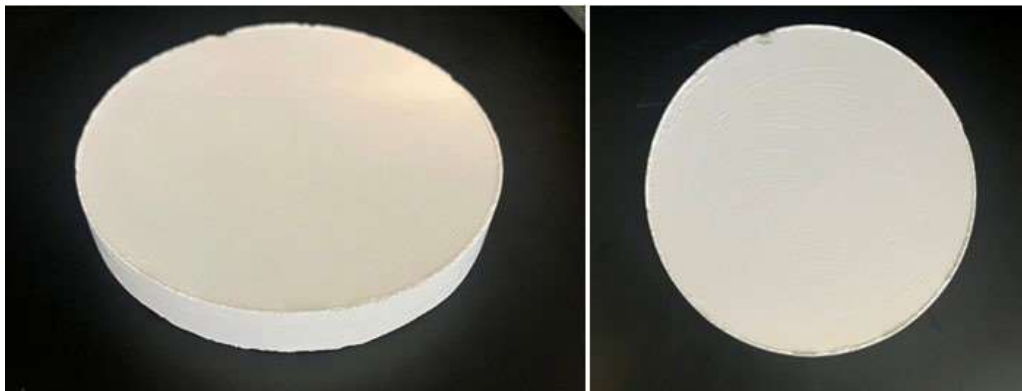


Figure S4. Presintered block made of recycled zirconia

Table S1. Pre- and post-sintering dimensions of samples derived from a single powder batch, with shrinkage and weight loss values determined for each sample.

Pre-sintered block	No. Sample	Initial measures		After sintering measures		Weight loss and shrinkage		Average and STD
		Weight [g]	Diameter [mm]	Weight [g]	Diameter [mm]	Weight [%]	Shrinkage [%]	
Block 1	1	0.3014	3.72	0.3008	3.02	-0.2	-18.87	18.855 ±0.03
	2	0.3304	3.73	0.3294	3.35	-0.3	-18.81	
	3	0.3023	3.72	0.3018	3.02	-0.17	-18.87	
	4	0.3024	3.72	0.3022	3.02	-0.07	-18.87	
Block 2	5	0.2989	3.72	0.2989	3.02	0	-18.87	18.78 ±0.16
	6	0.3016	3.71	0.3006	3.02	-0.33	-18.54	
	7	0.3082	3.72	0.3075	3.02	-0.23	-18.87	
	8	0.2968	3.72	0.2968	3.02	0	-18.87	
Block 3	9	0.2999	3.71	0.2994	3.01	-0.17	-18.94	19.18 ±0.17
	10	0.2918	3.74	0.2918	3.02	0	-19.21	
	11	0.303	3.73	0.3021	3.01	-0.3	-19.27	
	12	0.304	3.72	0.3029	3	-0.36	-19.33	

Figure S5. Prototypes measurements.



