

Supplementary Information

A composite from polymer and diamond microparticles: A novel material for fabrication of low cost thermally conducting devices using 3D printing

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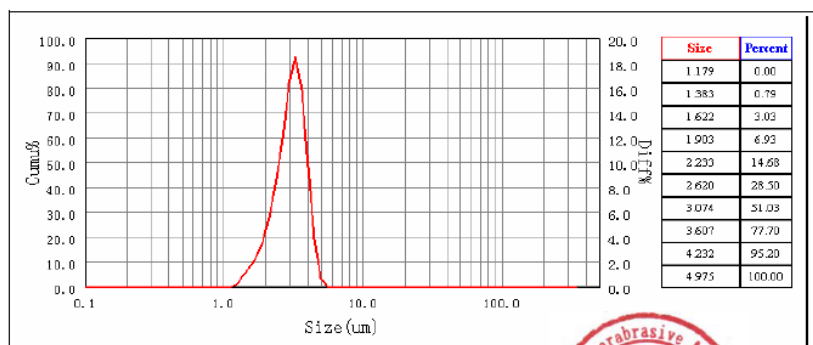
Hunan Real Tech Superabrasive & Tool Co., Ltd. Particle size analyse report

Sample Name:2-4um				Sample Owner:Hunan Real Tech Superabrasive & Tool Co., Ltd.			
Medium Name:water				Measure Dept: Hunan Real Tech Superabrasive & Tool Co., Ltd.			
Matter Index:2.645+0.000i		Optical:Mie		Operator:Richard		Test Date:2012-02-24	
Medium Index:1.333		Mode:6.3 - 1		Test Time:09:51:50		Range : 0.1um - 341um	
Remark:							

D50:3.054um	D[4,3]:3.026um	D[3,2]:2.834um	Obscuration:16.08%
Span:0.614	D[2,1]:2.620um	SSA:0.682m ² /g	Residual:7.510%

D10:2.047um	D50:3.054um	D90:3.925um	D95:4.219um
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Diam um	Diff%	Cumu%	Diam um	Diff%	Cumu%	Diam um	Diff%	Cumu%	Diam um	Diff%	Cumu%
0.100 - 0.120	0	0	0.750 - 0.850	0	0	5.500 - 6.000	0	100	45.00 - 50.00	0	100
0.120 - 0.130	0	0	0.850 - 1.000	0	0	6.000 - 7.000	0	100	50.00 - 60.00	0	100
0.130 - 0.150	0	0	1.000 - 1.150	0	0	7.000 - 8.000	0	100	60.00 - 70.00	0	100
0.150 - 0.170	0	0	1.150 - 1.300	0.31	0.31	8.000 - 9.000	0	100	70.00 - 80.00	0	100
0.170 - 0.200	0	0	1.300 - 1.500	1.38	1.69	9.000 - 10.00	0	100	80.00 - 90.00	0	100
0.200 - 0.230	0	0	1.500 - 1.700	2.23	3.92	10.00 - 12.00	0	100	90.00 - 100.0	0	100
0.230 - 0.260	0	0	1.700 - 2.000	5.07	8.99	12.00 - 14.00	0	100	100.0 - 115.0	0	100
0.260 - 0.300	0	0	2.000 - 2.300	7.68	16.67	14.00 - 16.00	0	100	115.0 - 130.0	0	100
0.300 - 0.330	0	0	2.300 - 2.500	6.86	23.53	16.00 - 18.00	0	100	130.0 - 150.0	0	100
0.330 - 0.380	0	0	2.500 - 3.000	23.63	47.16	18.00 - 20.00	0	100	150.0 - 170.0	0	100
0.380 - 0.450	0	0	3.000 - 3.500	26.32	73.48	20.00 - 24.00	0	100	170.0 - 200.0	0	100
0.450 - 0.500	0	0	3.500 - 4.000	17.78	91.26	24.00 - 28.00	0	100	200.0 - 230.0	0	100
0.500 - 0.550	0	0	4.000 - 4.500	7.28	98.54	28.00 - 32.00	0	100	230.0 - 260.0	0	100
0.550 - 0.650	0	0	4.500 - 5.000	1.46	100	32.00 - 38.00	0	100	260.0 - 300.0	0	100
0.650 - 0.750	0	0	5.000 - 5.500	0	100	38.00 - 45.00	0	100	300.0 - 340.0	0	100



Company:Hunan Real Tech Superabrasive & Tool Co., Ltd.
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Figure ESI1: Distribution of 2-4 μm diamond particles used

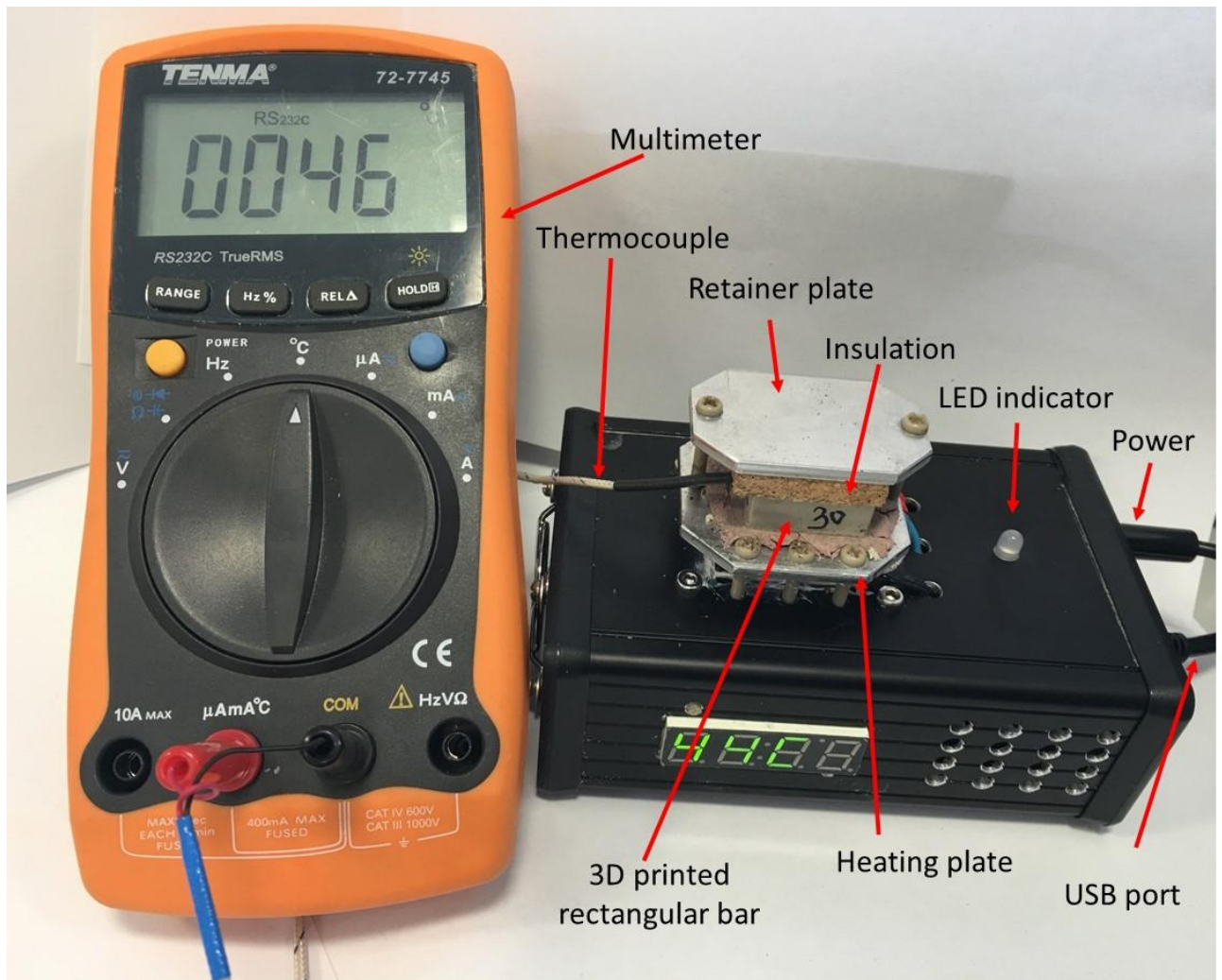


Figure ESI2: Heating system fitted with 3D printed PD-30 composite rectangular bar