

Inkjet-Printed Temperature Sensors Characterized According to Standards

Table S1. DoE with varying manufacturing parameters.

| Substrate | Printing Angle [°] | Sintering dwell time [h] | Heating rate [K/min] | Washing after sintering | Sintering temp. [°C/phot] | Coating | Name |
|-----------|--------------------|--------------------------|----------------------|-------------------------|---------------------------|---------|-----------------------|
| LCP | 0 | 1 | 2 | yes | 120 | yes | LCP 2 with coating |
| LCP | 0 | 1 | 2 | yes | 120 | no | LCP 2 without coating |
| LCP | 0 | 1 | 10 | yes | 200/120+phot | yes | LCP 4 with coating |
| LCP | 0 | 1 | 10 | yes | 200/120+phot | no | LCP 4 without coating |
| LCP | 0 | 24 | 2 | no | 120 | yes | LCP 5 with coating |
| LCP | 0 | 24 | 2 | no | 120 | no | LCP 5 without coating |
| LCP | 0 | 24 | 10 | no | 200/120+phot | yes | LCP 7 with coating |
| LCP | 0 | 24 | 10 | no | 200/120+phot | no | LCP 7 without coating |
| LCP | 90 | 1 | 2 | no | 200/120+phot | yes | LCP 6 with coating |
| LCP | 90 | 1 | 2 | no | 200/120+phot | no | LCP 6 without coating |
| LCP | 90 | 1 | 10 | no | 120 | yes | LCP 8 with coating |
| LCP | 90 | 1 | 10 | no | 120 | no | LCP 8 without coating |
| LCP | 90 | 24 | 2 | yes | 200/120+phot | yes | LCP 1 with coating |
| LCP | 90 | 24 | 2 | yes | 200/120+phot | no | LCP 1 without coating |
| LCP | 90 | 24 | 10 | yes | 120 | yes | LCP 3 with coating |
| LCP | 90 | 24 | 10 | yes | 120 | no | LCP 3 without coating |
| COC | 0 | 1 | 2 | no | 200/120+phot | yes | COC 6 with coating |
| COC | 0 | 1 | 2 | no | 200/120+phot | no | COC 6 without coating |
| COC | 0 | 1 | 10 | no | 120 | yes | COC 8 with coating |
| COC | 0 | 1 | 10 | no | 120 | no | COC 8 without coating |
| COC | 0 | 24 | 2 | yes | 200/120+phot | yes | COC 1 with coating |
| COC | 0 | 24 | 2 | yes | 200/120+phot | no | COC 1 without coating |
| COC | 0 | 24 | 10 | yes | 120 | yes | COC 2 with coating |
| COC | 0 | 24 | 10 | yes | 120 | no | COC 2 without coating |
| COC | 90 | 1 | 2 | yes | 120 | yes | COC 7 with coating |
| COC | 90 | 1 | 2 | yes | 120 | no | COC 7 without coating |
| COC | 90 | 1 | 10 | yes | 200/120+phot | yes | COC 3 with coating |
| COC | 90 | 1 | 10 | yes | 200/120+phot | no | COC 3 without coating |
| COC | 90 | 24 | 2 | no | 120 | yes | COC 5 with coating |
| COC | 90 | 24 | 2 | no | 120 | no | COC 5 without coating |
| COC | 90 | 24 | 10 | no | 200/120+phot | yes | COC 4 with coating |
| COC | 90 | 24 | 10 | no | 200/120+phot | no | COC 4 without coating |

Table S2. Properties of all 32 sensors.

| Sample No. | Hysteresis | Non-repeatability | Maximum measured error | Electrical resistance at room temperature | TCR [10^{-3} K^{-1}] |
|---------------------------|------------|-------------------|------------------------|---|----------------------------------|
| R220202y with coating | 1,4 | 0,6 | 1,2 | 52,00 | 1,31 |
| R220202y without coating | 2,5 | 2,7 | 3,1 | 55,00 | 1,29 |
| R220202B with coating | 57,2 | 84,0 | 60,6 | 482,00 | 0,16 |
| R220202B without coating | 11,1 | 16,5 | 12,5 | 515,00 | 0,15 |
| R220202z with coating | 278,8 | 368,5 | 285,4 | 250,00 | 0,36 |
| R220202z without coating | 175,3 | 238,2 | 179,3 | 259,00 | 0,36 |
| R220202C with coating | 14,3 | 19,8 | 15,2 | 94,00 | 0,85 |
| R220202C without coating | 11,2 | 15,2 | 11,8 | 93,00 | 0,89 |
| R220202D with coating | 90,1 | 123,0 | 92,3 | 257,00 | 0,30 |
| R220202D without coating | 41,6 | 57,6 | 43,6 | 253,00 | 0,32 |
| R220202A with coating | 13,9 | 19,3 | 14,6 | 102,00 | 0,84 |
| R220202A without coating | 9,6 | 12,6 | 10,0 | 93,00 | 0,89 |
| R220202F with coating | 1,4 | 0,8 | 1,1 | 51,00 | 1,21 |
| R220202F without coating | 0,5 | 1,4 | 1,2 | 53,00 | 1,20 |
| R220202v with coating | 1134,5 | 1248,1 | 1249,8 | 1200,00 | -0,65 |
| R220202v without coating | 668,1 | 878,1 | 681,4 | 280,00 | 0,52 |
| L220215h with coating | 31,2 | 48,3 | 33,2 | 89,00 | 0,80 |
| L220215h without coating | 10,7 | 17,5 | 11,5 | 83,00 | 0,93 |
| L220215i with coating | 133,9 | 201,5 | 139,6 | 258,00 | 0,27 |
| L220215i without coating | 52,0 | 81,5 | 59,4 | 244,00 | 0,33 |
| L220215c with coating | 20,0 | 32,0 | 21,7 | 41,00 | 1,39 |
| L220215c without coating | 6,1 | 12,4 | 11,0 | 42,00 | 1,41 |
| L220215e with coating | 61,4 | 95,1 | 65,4 | 89,00 | 0,77 |
| L220215e without coating | 16,5 | 25,6 | 17,6 | 93,00 | 0,86 |
| L220215d with coating | 283,9 | 384,1 | 295,6 | 139,00 | 0,40 |
| L220215d without coating | 213,4 | 319,1 | 225,0 | 216,00 | 0,33 |
| L220202-1 with coating | 151,1 | 201,2 | 157,9 | 39,00 | 1,22 |
| L220202-1 without coating | 43,6 | 80,8 | 64,7 | 40,00 | 1,20 |
| L220215b with coating | 1054,3 | 1214,7 | 1071,0 | 545,00 | 0,18 |
| L220215b without coating | 713,1 | 913,3 | 732,7 | 543,00 | 0,19 |
| L220202-2 with coating | 616,4 | 680,0 | 642,3 | 617,00 | 0,94 |
| L220202-2 without coating | 218,0 | 294,0 | 259,0 | 724,00 | 0,90 |