

## Supplementary Information

### List of supplementary information

**Table S1:** The average and fold change of impurities present in tantalum pin upon change in current when normalized against 3 mA, 1000 V.....S1

**Table S2:** The average and fold change of impurities present in tantalum pin upon change in voltage when normalized against 3 mA, 1000 V.....S2

**Table S1:** The average and fold change of impurities present in tantalum pin upon change in current when normalized against 3 mA, 1000 V

| Current<br>(mA) | Si28             |                | P31              |                | Na23             |                | Nb93             |                |
|-----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|----------------|
|                 | Average<br>(ppm) | Fold<br>change | Average<br>(ppm) | Fold<br>change | Average<br>(ppm) | Fold<br>change | Average<br>(ppm) | Fold<br>change |
| 0.5             | 56.4             | 4.1            | 5.3              | 4.1            | 9.3              | 0.6            | 6.4              | 1.1            |
| 1.0             | 41.9             | 3.1            | 3.8              | 2.9            | 10.2             | 0.7            | 7.2              | 1.3            |
| 1.5             | 29.3             | 2.1            | 2.7              | 2.1            | 11.3             | 0.7            | 6.9              | 1.2            |
| 2.0             | 20.8             | 1.5            | 2.0              | 1.5            | 12.2             | 0.8            | 6.3              | 1.1            |
| 2.5             | 16.3             | 1.2            | 1.6              | 1.2            | 13.8             | 0.9            | 5.9              | 1.0            |
| 3.0             | 13.7             | 1.0            | 1.3              | 1.0            | 15.5             | 1.0            | 5.7              | 1.0            |
| 3.5             | 12.4             | 0.9            | 1.2              | 0.9            | 18.1             | 1.2            | 5.8              | 1.0            |
| 4.0             | 11.2             | 0.8            | 1.1              | 0.8            | 20.2             | 1.3            | 5.8              | 1.0            |
| 4.5             | 10.2             | 0.7            | 1.0              | 0.7            | 22.0             | 1.4            | 5.6              | 1.0            |
| 5.0             | 9.3              | 0.7            | 0.9              | 0.7            | 23.8             | 1.5            | 5.5              | 1.0            |

**Table S2:** The average and fold change of impurities present in tantalum pin upon change in voltage when normalized against 3 mA, 1000 V

| Voltage<br>(V) | Si28             |                | P31              |                | Na23             |                | Nb93             |                |
|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|----------------|
|                | Average<br>(ppm) | Fold<br>change | Average<br>(ppm) | Fold<br>change | Average<br>(ppm) | Fold<br>change | Average<br>(ppm) | Fold<br>change |
| <b>600</b>     | 11.2             | 0.9            | 1.1              | 0.8            | 13.5             | 0.9            | 4.5              | 0.7            |
| <b>700</b>     | 10.9             | 0.9            | 1.1              | 0.8            | 14.7             | 0.9            | 4.9              | 0.8            |
| <b>800</b>     | 10.9             | 0.9            | 1.2              | 0.8            | 15.6             | 1.0            | 5.4              | 0.9            |
| <b>900</b>     | 11.5             | 0.9            | 1.3              | 0.9            | 15.8             | 1.0            | 5.7              | 1.0            |
| <b>1000</b>    | 12.2             | 1.0            | 1.4              | 1.0            | 15.7             | 1.0            | 6.0              | 1.0            |
| <b>1100</b>    | 13.7             | 1.1            | 1.7              | 1.2            | 15.7             | 1.0            | 6.4              | 1.1            |
| <b>1200</b>    | 15.4             | 1.3            | 2.0              | 1.4            | 15.9             | 1.0            | 6.7              | 1.1            |
| <b>1300</b>    | 17.3             | 1.4            | 2.3              | 1.6            | 15.8             | 1.0            | 6.9              | 1.2            |
| <b>1500</b>    | 23.2             | 1.9            | 3.3              | 2.3            | 15.9             | 1.0            | 7.5              | 1.2            |