

Table S1: The OA<sub>25</sub> Taguchi design for the optimization of experimental parameters in off-line CPE / FI-ICP-AES

| Test | pH  | Temp. | Surf. (%) | Ionic effect (mol L <sup>-1</sup> ) | L/M Ratio | Intensity Repeat 1 | Intensity Repeat 2 |
|------|-----|-------|-----------|-------------------------------------|-----------|--------------------|--------------------|
| 1    | 4.0 | 30    | 0.05      | 0.05                                | 2         | 729.8              | 5341.4             |
| 2    | 4.0 | 40    | 0.1       | 0.1                                 | 5         | 10262.3            | 9375.9             |
| 3    | 4.0 | 50    | 0.15      | 0.25                                | 10        | 12424.8            | 11816.6            |
| 4    | 4.0 | 60    | 0.2       | 0.5                                 | 20        | 15448.5            | 15333              |
| 5    | 4.0 | 70    | 0.4       | 0.75                                | 40        | 14828.6            | 14202              |
| 6    | 4.5 | 30    | 0.1       | 0.25                                | 20        | 15950.9            | 18919.2            |
| 7    | 4.5 | 40    | 0.15      | 0.5                                 | 40        | 16818.2            | 16727.1            |
| 8    | 4.5 | 50    | 0.2       | 0.75                                | 2         | 631.5              | 937.7              |
| 9    | 4.5 | 60    | 0.4       | 0.05                                | 5         | 8002.6             | 8379.2             |
| 10   | 4.5 | 70    | 0.05      | 0.1                                 | 10        | 17325              | 17376.5            |
| 11   | 5.0 | 30    | 0.15      | 0.75                                | 5         | 6763.4             | 7402.8             |
| 12   | 5.0 | 40    | 0.2       | 0.05                                | 10        | 11899.8            | 13154.3            |
| 13   | 5.0 | 50    | 0.4       | 0.1                                 | 20        | 11220.4            | 11223.7            |
| 14   | 5.0 | 60    | 0.05      | 0.25                                | 40        | 15760.1            | 17250.5            |
| 15   | 5.0 | 70    | 0.1       | 0.5                                 | 2         | 1995.8             | 2443.2             |
| 16   | 6.0 | 30    | 0.2       | 0.1                                 | 40        | 8621.3             | 9223.8             |
| 17   | 6.0 | 40    | 0.4       | 0.25                                | 2         | 2774.6             | 2552.2             |
| 18   | 6.0 | 50    | 0.05      | 0.5                                 | 5         | 11555.5            | 12453.2            |
| 19   | 6.0 | 60    | 0.1       | 0.75                                | 10        | 16551.5            | 14465.2            |
| 20   | 6.0 | 70    | 0.15      | 0.05                                | 20        | 13731.7            | 12601.5            |
| 21   | 7.0 | 30    | 0.4       | 0.5                                 | 10        | 7716.8             | 6760.6             |
| 22   | 7.0 | 40    | 0.05      | 1                                   | 20        | 11581              | 12580.7            |
| 23   | 7.0 | 50    | 0.1       | 0.05                                | 40        | 14725.1            | 15187.4            |
| 24   | 7.0 | 60    | 0.15      | 0.1                                 | 2         | 3040               | 2622.9             |
| 25   | 7.0 | 70    | 0.2       | 0.25                                | 5         | 3877.7             | 5003.8             |