



## Supplementary Materials

**Table S1.** The Variables; their Codes and the Real Experimental Values Used in the BBD.

| Independent variables                                   | Study levels |    |     |
|---|--------------|----|-----|
|   | -1           | 0  | +1  |
| X <sub>1</sub> : Current density (mA.cm <sup>-2</sup> ) | 25           | 50 | 75  |
| X <sub>2</sub> : Electrolysis time (h)                  | 2            | 4  | 6   |
| X <sub>3</sub> : [pollutants] (mg L <sup>-1</sup> )     | 25           | 75 | 125 |

**Table S2.** Analysis of Variance of the Response Surface Quadratic Model for the Prediction of MO Degradation Efficiency.

| Source   | Sum of squares | df | Mean square | F value | p-value prob <>F |
|--|----------------|----|-------------|---------|------------------|
| Model  | 2102.01        | 9  | 233.55      | 123.64  | 0.01             |
| X <sub>1</sub> -Current density                            | 319.633        | 1  | 319.633     | 28.97   | 0.0007           |
| X <sub>2</sub> -Electrolysis time                          | 1176.55        | 1  | 1176.55     | 106.63  | <0.00001         |
| X <sub>3</sub> -dye concentration                          | 467.407        | 1  | 467.407     | 42.36   | 0.0002           |
| X <sub>1</sub> X <sub>2</sub>                              | 16.564         | 1  | 16.564      | 1.50    | 0.2553           |
| X <sub>1</sub> X <sub>3</sub>                              | 3.5261         | 1  | 3.5261      | 0.32    | 0.5874           |
| X <sub>1</sub> <sup>2</sup>                                | 11.2949        | 1  | 11.2949     | 1.02    | 0.3413           |
| X <sub>2</sub> <sup>2</sup>                                | 20.796         | 1  | 20.796      | 1.88    | 0.207            |
| X <sub>2</sub> X <sub>3</sub>                              | 0.1599         | 1  | 0.1599      | 0.01    | 0.9071           |
| X <sub>3</sub> <sup>2</sup>                                | 0.2201         | 1  | 0.2201      | 0.02    | 0.8912           |
| Residual   | 88.268         | 8  |             |         | 11.0335          |
| Lack of fit  | 86.776         | 4  |             |         | 21.69            |
| Pure error   | 1.4914         | 4  |             |         | 0.373            |
| Cor total  | 2013.743       | 17 |             |         |                  |
| R <sub>2</sub> = 0.9580, Adjusted R <sup>2</sup> = 0.9108. |                |    |             |         |                  |

**Table S3.** Analysis of Variance of the Response Surface Quadratic Model for the Prediction of NR Degradation Efficiency.

| Source   | Sum of squares | df | Mean square | F value | p-value prob <>F |
|--|----------------|----|-------------|---------|------------------|
| Model  | 1381.41        | 9  | 153.49      | 81.25   | 0.001            |
| X <sub>1</sub> -Current density                            | 64.988         | 1  | 64.9886     | 10.25   | 0.0126           |
| X <sub>2</sub> -Electrolysis time                          | 717.728        | 1  | 717.728     | 113.15  | 0.00001          |
| X <sub>3</sub> -dye concentration                          | 5.7223         | 1  | 5.7223      | 0.90    | 0.370            |
| X <sub>1</sub> X <sub>2</sub>                              | 9.4519         | 1  | 9.4519      | 1.49    | 0.257            |
| X <sub>1</sub> X <sub>3</sub>                              | 90.7306        | 1  | 90.7306     | 14.30   | 0.0054           |
| X <sub>2</sub> X <sub>3</sub>                              | 12.5228        | 1  | 12.5228     | 1.97    | 0.1976           |
| X <sub>1</sub> <sup>2</sup>                                | 64.8994        | 1  | 64.8994     | 10.23   | 0.0126           |
| X <sub>2</sub> <sup>2</sup>                                | 35.0187        | 1  | 35.0187     | 5.52    | 0.0467           |
| X <sub>3</sub> <sup>2</sup>                                | 266.623        | 1  | 266.623     | 42.03   | 0.0002           |
| Residual   | 50.74          | 8  | 6.34        |         |                  |
| Lack of fit  | 23.33          | 4  | 5.8325      |         |                  |
| Pure error   | 5.404          | 8  | 0.67        |         |                  |
| Cor total  | 1381.405       | 17 |             |         |                  |
| R <sup>2</sup> = 0.9632, Adjusted R <sup>2</sup> = 0.9219. |                |    |             |         |                  |

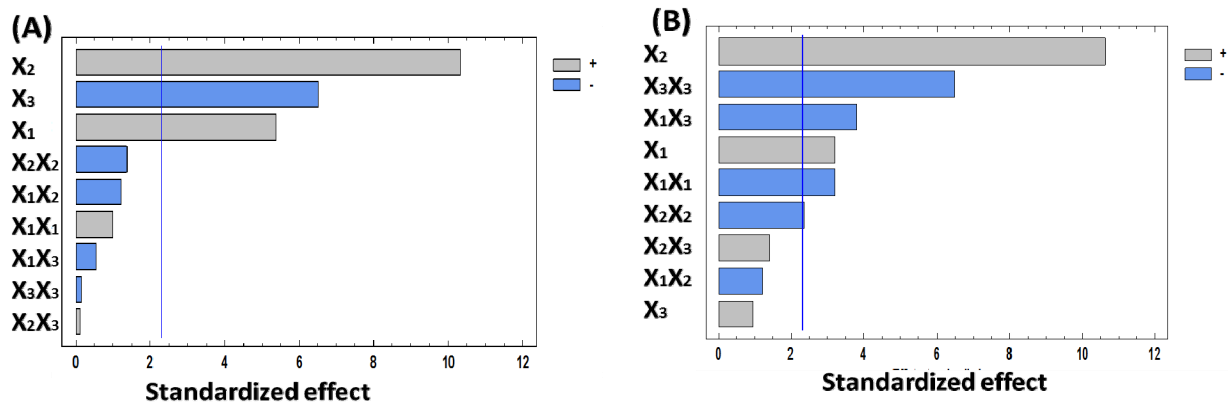


Fig. S1. Pareto graphic analysis A) MO and B) NR.

Table S4. Optimum Values of MO and NR COD Removal Efficiencies.

| Factors  | MO:<br>Optimum | NR:<br>Optimum | Optimum value of COD removal<br>efficiency of MO dye (%) | Optimum value of COD removal<br>efficiency of NR dye (%) |
|--|----------------|----------------|--|--|
| X <sub>1</sub> : current density (mA/cm <sup>2</sup> ) | 75.00          | 52.08          | 98.71  | 82.73  |
| X <sub>2</sub> : electrolysis time (h)                 | 6.00           | 6.00           |  |  |
| X <sub>3</sub> : initial dye concentration (mg/L)      | 29.02          | 82.05          |  |  |