

Supplementary Materials: The following are available online at www.mdpi.com/xxx/s1

Table S1. Taguchi array L16 experimental layout

| Experiment Run | Reaction Time | Analyte | H ₂ O ₂ | H ₂ O ₂ :Fe(0)/H ₂ O ₂ :FeSO ₄ | Initial pH |
|----------------|---------------|---------|-------------------------------|---|------------|
| 1 | 1 | 1 | 1 | 1 | 1 |
| 2 | 1 | 2 | 2 | 2 | 1 |
| 3 | 1 | 3 | 3 | 3 | 2 |
| 4 | 1 | 4 | 4 | 4 | 2 |
| 5 | 2 | 1 | 3 | 2 | 2 |
| 6 | 2 | 2 | 4 | 1 | 2 |
| 7 | 2 | 3 | 1 | 4 | 1 |
| 8 | 2 | 4 | 2 | 3 | 1 |
| 9 | 3 | 1 | 4 | 3 | 1 |
| 10 | 3 | 2 | 3 | 4 | 1 |
| 11 | 3 | 3 | 2 | 1 | 2 |
| 12 | 3 | 4 | 1 | 2 | 2 |
| 13 | 4 | 1 | 2 | 4 | 2 |
| 14 | 4 | 2 | 1 | 3 | 2 |
| 15 | 4 | 3 | 4 | 2 | 1 |
| 16 | 4 | 4 | 3 | 1 | 1 |

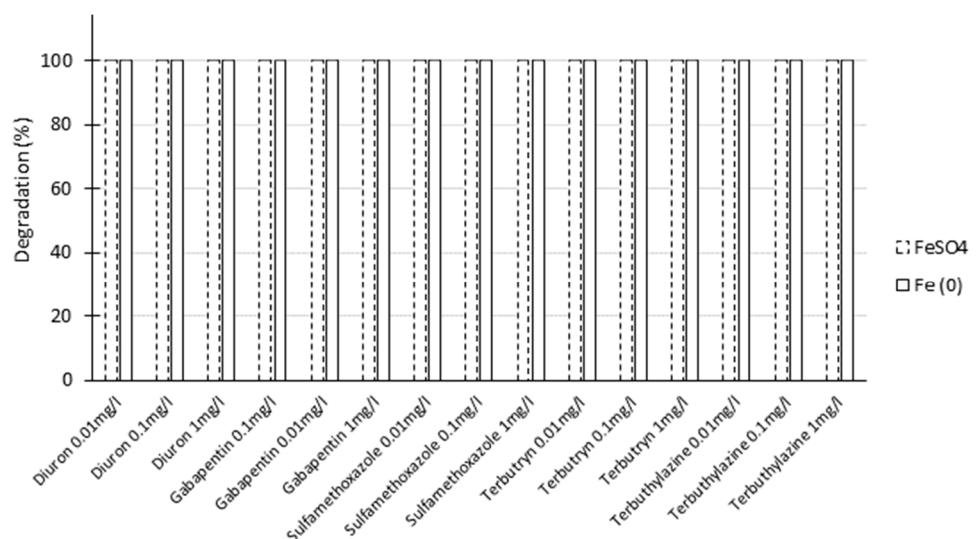


Figure S1. Micro-pollutants (MPs) degradation at optimal experimental conditions

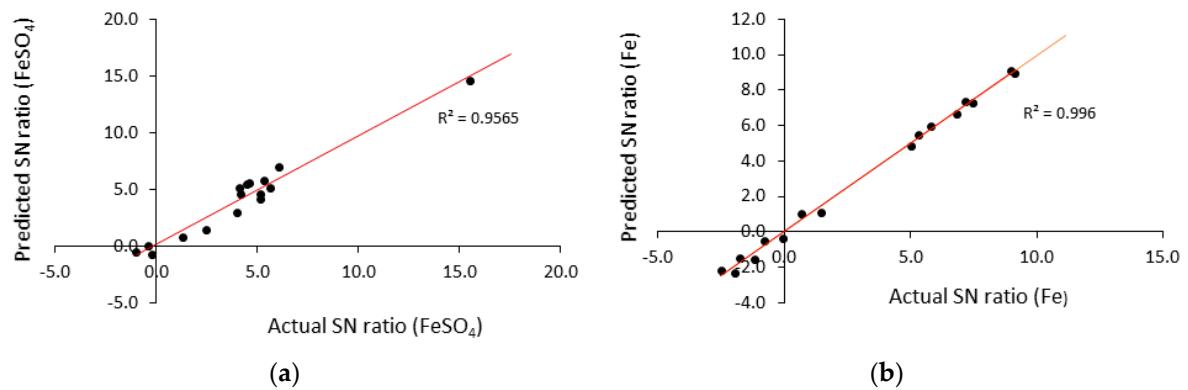


Figure S2. Regression plot of actual vs predicted SN ratio obtained after the Taguchi analysis for the (a) FeSO₄ treatment ($R^2 = 0.956$) and (b) Fe treatment ($R^2 = 0.996$).