**Supplementary Material**

**Figures captions**

**Fig. S1.** Normal probability plots for a) MB, b) SO; and experimental data versus predicted data for c) MB, d) SO.

**Tables captions**

**Table S1.** Analysis of variance (ANOVA) of MB.

**Table S2.** Analysis of variance (ANOVA) of SO.

**Table S3.** Extraction recoveries in different samples by the USA-DSPE method.

|  |  |
| --- | --- |
|  | b) |
| c) | d) |
| **Fig. S1.** Normal probability plots for a) MB, b) SO; and experimental data versus predicted data for c) MB, d) SO. |

a)

**Table S1.** Analysis of variance (ANOVA) of MB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Source** | **Sum of square** | **Degree of freedom** | **Mean square** | **F-value** | **P-value** |  |
| Model | 5568.39 | 14 | 397.74 | 282.25 | < 0.0001 | *Significant* |
| X1- Adsorbent amount | 60.39 | 1 | 60.39 | 42.86 | < 0.0001 |  |
| X2- pH of solution | 400.79 | 1 | 400.79 | 284.41 | < 0.0001 |  |
| X3- Eluent volume | 399.51 | 1 | 399.51 | 283.51 | < 0.0001 |  |
| X4- Ultrasound time | 45.90 | 1 | 45.90 | 32.58 | < 0.0001 |  |
| X1X2 | 134.68 | 1 | 134.68 | 95.57 | < 0.0001 |  |
| X1X3 | 103.12 | 1 | 103.12 | 73.18 | < 0.0001 |  |
| X1X4 | 4.04 | 1 | 4.04 | 2.87 | 0.1125 |  |
| X2X3 | 435.14 | 1 | 435.14 | 308.79 | < 0.0001 |  |
| X2X4 | 4.28 | 1 | 4.28 | 3.04 | 0.1031 |  |
| X3X4 | 26.37 | 1 | 26.37 | 18.71 | 0.0007 |  |
| $$X\_{1}^{²}$$ | 2467.31 | 1 | 2467.31 | 1750.91 | < 0.0001 |  |
| $$X\_{2}^{²}$$ | 1249.56 | 1 | 1249.56 | 886.74 | < 0.0001 |  |
| $X\_{3}^{²}$  | 1650.85 | 1 | 1650.85 | 1171.51 | < 0.0001 |  |
| $X\_{4}^{²}$  | 218.17 | 1 | 218.17 | 154.82 | < 0.0001 |  |
| Residual | 19.73 | 14 | 1.41 |  |  |  |
| *Lack of Fit* | 14.49 | 10 | 1.45 | 1.11 | 0.5023 | *Not significant* |
| Cor Total | 5588.12 | 28 |  |  |  |  |
| R2= 0.9965 |  |  |  |  |  |  |
| Adjusted R2= 0.9929 |  |  |  |  |  |  |
| Adeq-precision= 51.60 |  |  |  |  |  |  |

**Table S2.** Analysis of variance (ANOVA) of SO.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Source** | **Sum of square** | **Degree of freedom** | **Mean square** | **F-value** | **P-value** |  |
| Model | 4091.11 | 14 | 292.22 | 764.97 | < 0.0001 | Significant |
| X1- Adsorbent amount | 60.30 | 1 | 60.30 | 157.85 | < 0.0001 |  |
| X2- pH of solution | 39.75 | 1 | 39.75 | 104.05 | < 0.0001 |  |
| X3- Eluent volume | 304.01 | 1 | 304.01 | 795.83 | < 0.0001 |  |
| X4- Ultrasound time | 20.59 | 1 | 20.59 | 53.91 | < 0.0001 |  |
| X1X2 | 9.15 | 1 | 9.15 | 23.95 | 0.0002 |  |
| X1X3 | 48.93 | 1 | 48.93 | 128.09 | < 0.0001 |  |
| X1X4 | 11.29 | 1 | 11.29 | 29.55 | < 0.0001 |  |
| X2X3 | 30.64 | 1 | 30.64 | 80.20 | < 0.0001 |  |
| X2X4 | 28.41 | 1 | 28.41 | 74.37 | < 0.0001 |  |
| X3X4 | 3.57 | 1 | 3.57 | 9.35 | 0.0085 |  |
| $$X\_{1}^{²}$$ | 1569.34 | 1 | 1569.34 | 4108.14 | < 0.0001 |  |
| $$X\_{2}^{²}$$ | 1144.71 | 1 | 1144.71 | 2996.56 | < 0.0001 |  |
| $X\_{3}^{²}$  | 1415.41 | 1 | 1415.41 | 3705.20 | < 0.0001 |  |
| $X\_{4}^{²}$  | 1394.89 | 1 | 1394.89 | 3651.47 | < 0.0001 |  |
| Residual | 5.35 | 14 | 0.38 |  |  |  |
| *Lack of Fit* | 2.93 | 10 | 0.29 | 0.48 | 0.8396 | *Not significant* |
| Cor Total | 4096.46 | 28 |  |  |  |  |
| R2= 0.9987 |  |  |  |  |  |  |
| Adjusted R2= 0.9974 |  |  |  |  |  |  |
| Adeq-precision= 82.61 |  |  |  |  |  |  |

**Table S3.** Extraction recoveries in different samples by the USA-DSPE method.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dye | Samples | Added (µg L-1) | Found (µg L-1) | ER% ± RSD (%) (n= 3) |
| MB | Tap water | 0 | Nd a |  |
|  |  | 400 | 396.44 | 99.11 ± 1.7 |
|  |  | 800 | 785.03 | 98.12 ± 2.0 |
|  | River water | 0 | Nd |  |
|  |  | 400 | 393.46 | 98.36 ± 2.5 |
|  |  | 800 | 787.79 | 98.47 ± 3.5 |
|  | Mineral Water | 0 | Nd |  |
|  |  | 400 | 385.41 | 96.35 ± 2.4 |
|  |  | 800 | 792.42 | 99.05 ± 4.0 |
|  | Wastewater | 0 | Nd |  |
|  |  | 400 | 374.98 | 93.74 ± 3.3 |
|  |  | 800 | 753.03 | 94.12 ± 2.6 |
| SO | Tap water | 0 | Nd |  |
|  |  | 400 | 388.30 | 97.07 ± 2.6 |
|  |  | 800 | 789.95 | 98.73 ± 1.4 |
|  | River water | 0 | Nd |  |
|  |  | 400 | 388.12 | 97.03 ± 2.7 |
|  |  | 800 | 783.72 | 97.96 ± 2.5 |
|  | Mineral Water | 0 | Nd |  |
|  |  | 400 | 381.19 | 95.29 ± 1.4 |
|  |  | 800 | 783.19 | 97.89 ± 1.8 |
|  | Wastewater | 0 | Nd |  |
|  |  | 400 | 380.05 | 95.01 ± 2.1 |
|  |  | 800 | 750.66 | 93.83 ± 1.0 |

 a Nd: Not detected.