

## *Supplementary Materials*

# **Pristine and UV-Weathered PET Microplastics as Water Contaminants: Appraising the Potential of the Fenton process for Effective Remediation**

**Marin Kovačić <sup>1</sup>, Antonija Tomić <sup>1</sup>, Stefani Tonković <sup>1</sup>, Anamarija Pulitika <sup>1</sup>, Josipa Papac Zjačić <sup>1</sup>, Zvonimir Katančić <sup>1</sup>, Boštjan Genorio <sup>2</sup>, Hrvoje Kušić <sup>1</sup>, Ana Lončarić Božić <sup>1,\*</sup>**

<sup>1</sup> Faculty of Chemical Engineering and Technology, University of Zagreb, Trg Marka Marulića 19, HR-10000 Zagreb, Croatia

<sup>2</sup> Faculty of Chemistry and Chemical Technology, University of Ljubljana, Večna pot 113, SI-1000 Ljubljana, Slovenia

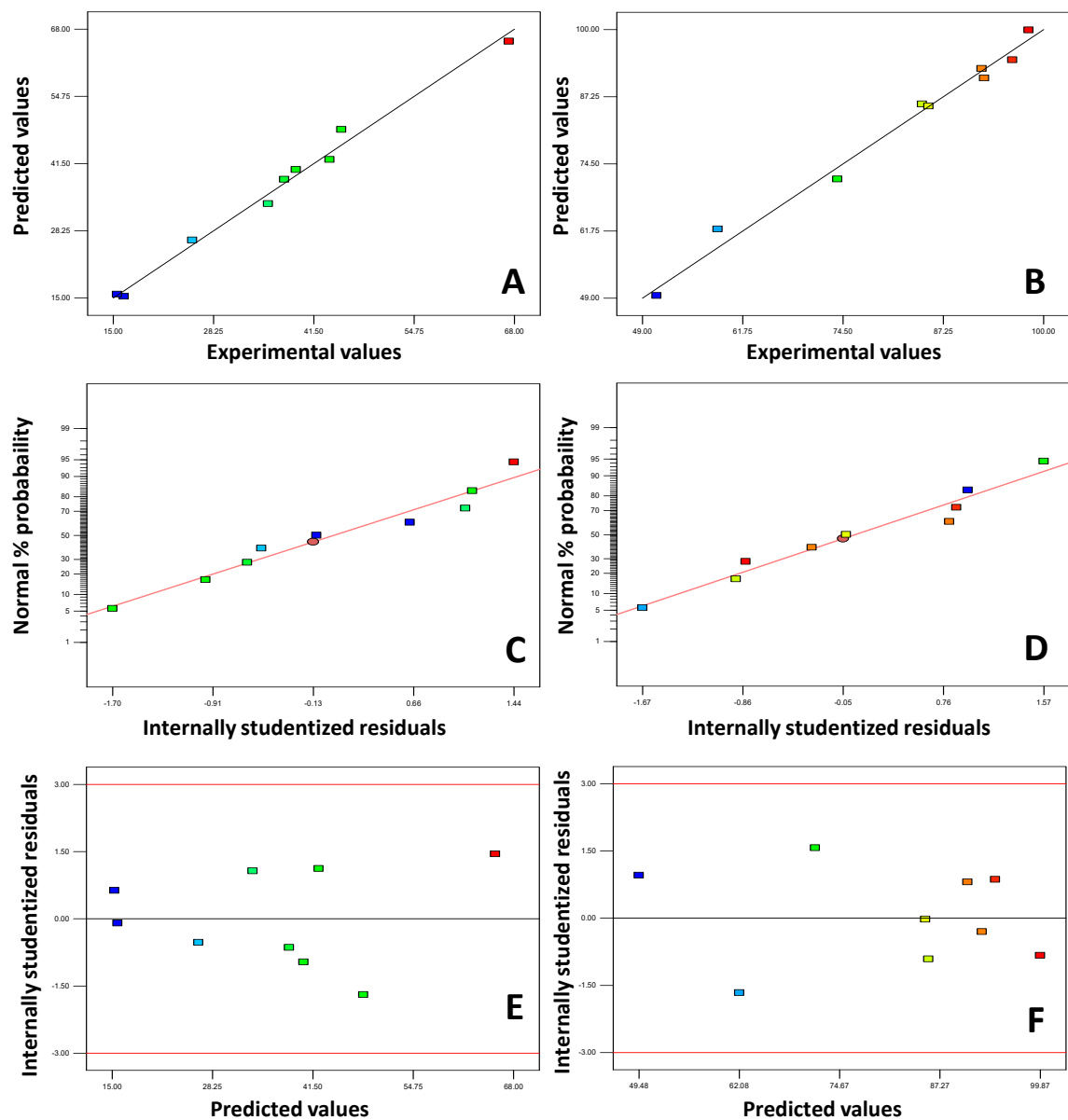
\* Correspondence: abozic@fkit.unizg.hr

**Table S1.** Full-factorial experimental plan for the removal of pristine PET MPs (PET<sub>0</sub>) with the Fenton process:

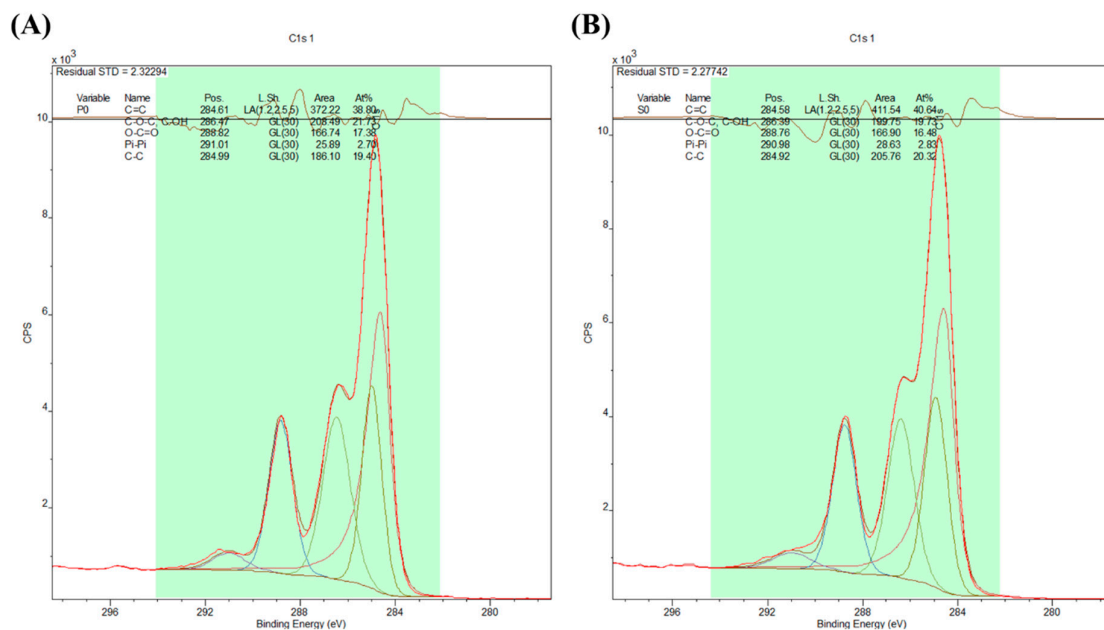
Exp. #	$\gamma$ (MPs), ppm	$c(\text{Fe}^{2+})$ , mM	MPs removed, %
1	125	10	67.28
2	250	10	25.46
3	375	10	37.61
4	125	25	45.16
5	250	25	16.43
6	375	25	35.47
7	125	40	43.6
8	250	40	15.54
9	375	40	39.15

**Table S2.** Full-factorial experimental plan for the removal of PET MPs obtained from UV-weathered PET for 28 days (PET<sub>28</sub>) with the Fenton process:

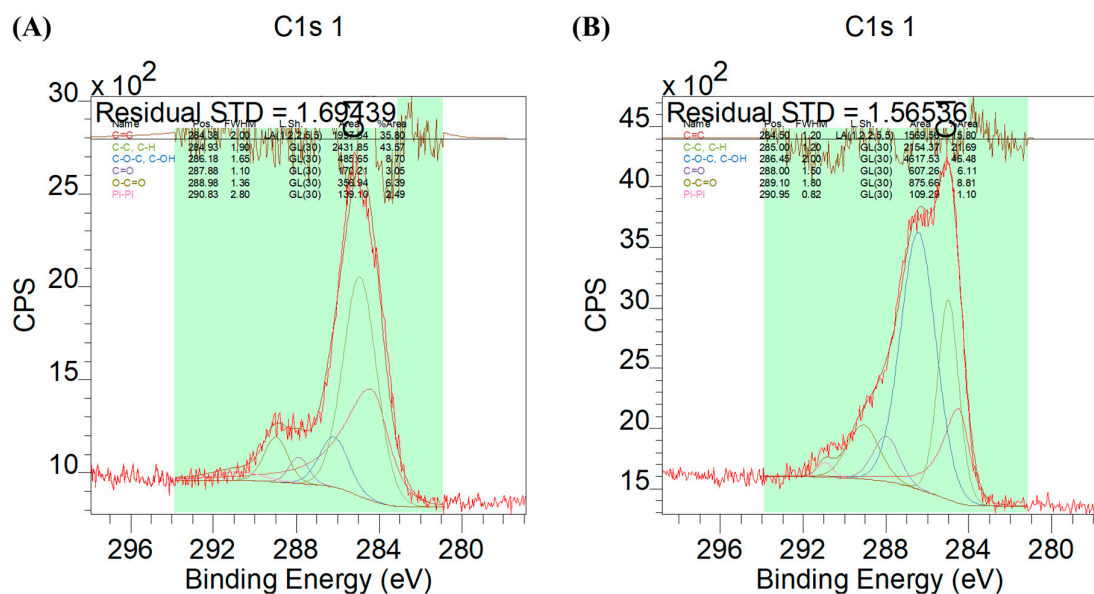
Exp. #	$\gamma$ (MPs), ppm	$c(\text{Fe}^{2+})$ , mM	MPs removed, %
1	125	10	92.14
2	250	10	92.46
3	375	10	84.56
4	125	25	98.11
5	250	25	96.04
6	375	25	85.39
7	125	40	73.79
8	250	40	58.58
9	375	40	50.81



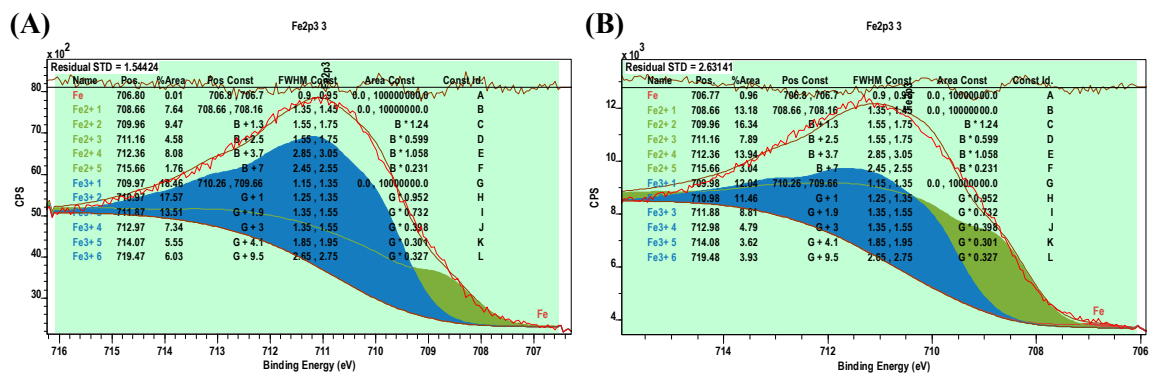
**Figure S1.** ANOVA diagnostic plots depicting the predicted vs. actual values for the normal plot of residuals for model  $Y_1$  (A), and model  $Y_2$  (B), normal plot of residuals for models  $Y_1$  (C) and  $Y_2$  (D), internally studentized residuals for model  $Y_1$  (E), and model  $Y_2$  (F).



**Figure S2.** Deconvoluted XPS C 1s spectra for (A) PET<sub>0</sub> MPs, and (B) PET<sub>28</sub> MPs.



**Figure S3.** Deconvoluted XPS C 1s spectra for samples (A) PET<sub>0</sub> MPs, and (B) PET<sub>28</sub> MPs corresponding to experiment #8 in Tables S1 and S2, respectively, after the Fenton treatment.



**Figure S4.** Deconvoluted XPS Fe 2p3/2 core-level spectra for samples (A) PET<sub>0</sub> MPs, and (B) PET<sub>28</sub> MPs corresponding to experiment #8 in Tables S1 and S2, respectively, after the Fenton treatment.