

Supporting Information

Fenton's reagent for the rapid and efficient isolation of microplastics from wastewater

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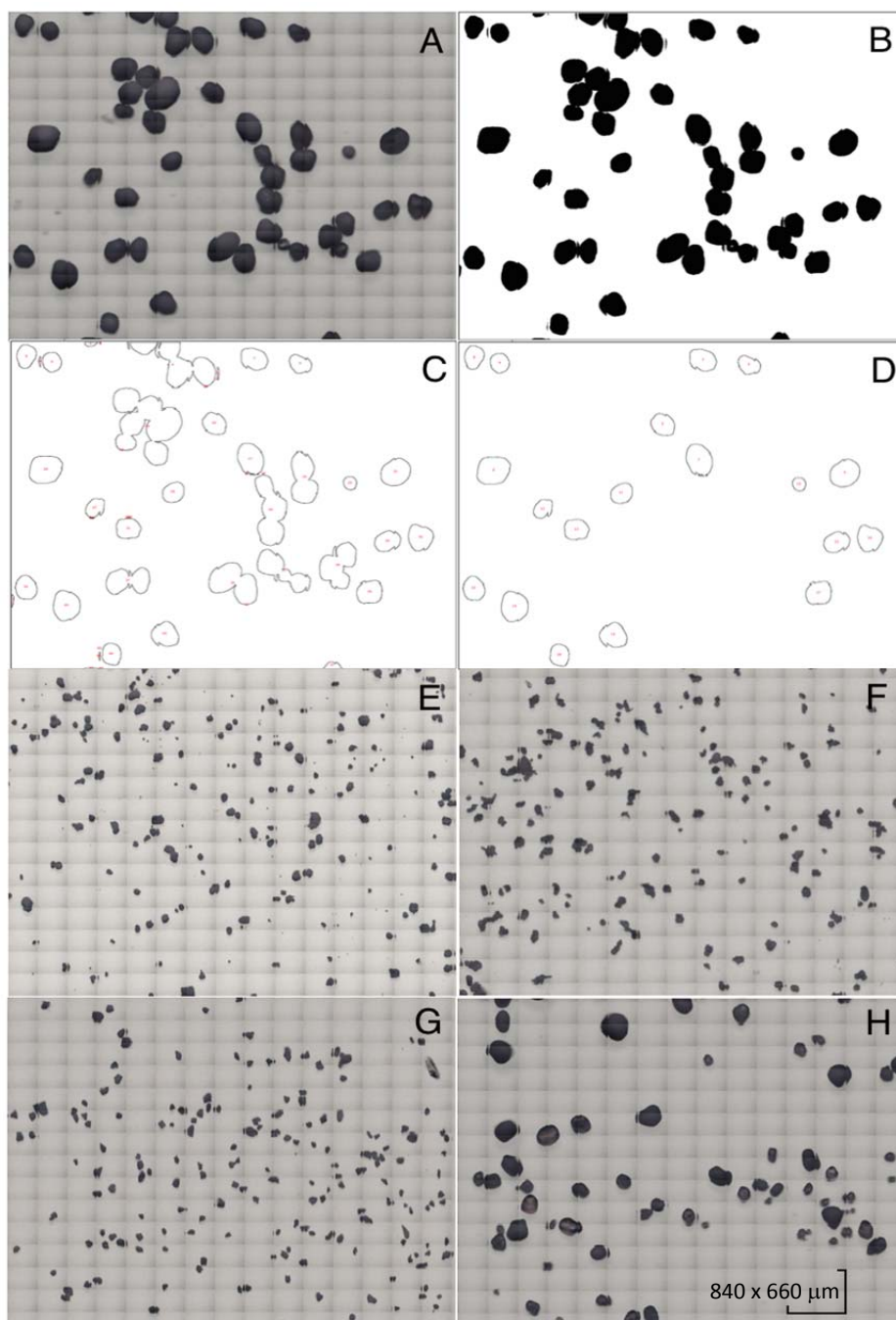


Figure S1. Examples of images used in microplastics size determination. A: Original image of PP microplastics; B: Silhouette of PP image to distinguish microplastic from background using ImageJ;¹ C: ImageJ selections of microplastic areas to be measured. D: ImageJ selections of microplastic areas with overlapping particles removed; E: Original image with PE microplastics; F: Original image with PVC microplastics; G: Original image with nylon microplastics; H: Original image with PP microplastics, including scale bar applicable to all images A-H.

Table S1. Original data (in μm^2) to investigate the impacts of Fenton's reagent on the size of the microplastic particles. The 2D surface areas of at least 20 pre- and post-reaction fragments for each polymer type were obtained using the software ImageJ.¹ "Control" refers to microplastics unexposed to Fenton's reagent while "Low", "Medium" and "High" columns refer to the size of microplastic samples after exposure to the respective concentration of Fenton's reagent.

Polyethylene				Polypropylene			
Control	Low	Medium	High	Control	Low	Medium	High
3733.8	1207.7	12670.3	5136.4	42361.1	83746.1	35288.9	106885.4
1214.2	6615.9	1078.3	4026.9	133317.7	29344.4	16044.4	107517.8
10776.4	6563.4	2695.8	9245.5	74207.5	45702.4	53644.4	95501.1
23525.8	12811.8	12351.7	7355.3	98796.0	56191.5	12800.0	67040.5
2944.5	17327.4	8381.5	3739.3	62204.0	81997.9	68888.9	79225.9
2337.4	15279.6	1225.4	11053.5	65530.6	52820.0	72355.6	34068.4
4887.3	1207.7	8822.7	2013.5	86024.9	74547.3	77466.7	40055.7
4219.5	8506.2	25781.8	16518.6	136434.8	124120.7	29911.1	8264.1
2519.5	6090.8	1715.5	5095.3	159325.2	85577.5	59555.6	75557.6
1517.8	5145.7	16910.1	5424.0	42361.1	76670.1	121022.2	20112.2
4310.5	11919.1	2034.1	16354.2	29938.9	64391.3	43777.8	139941.8
18183.2	19532.7	9043.2	9615.3	73486.4	72424.6	15111.1	121347.6
4158.8	8768.7	5122.0	4191.3	57760.9	73923.0	77777.8	38875.1
2549.9	2152.8	10807.8	3246.2	87467.2	33423.5	154888.9	107264.8
1305.3	15069.6	1617.5	1191.6	107589.3	28595.2	151733.3	25087.5
11201.3	3623.0	15047.5	1849.1	86862.3	52570.2	14844.4	17793.1
2944.5	7141.0	2769.3	1890.2	86373.8	98106.1	76355.6	11595.1
3308.8	8716.2	8161.0	2958.5	103332.2	45369.4	4088.9	36050.1
15754.7	4148.1	5906.3	8094.9	136853.6	54193.5	72311.1	8517.1
13356.6	9923.9	2475.2	7971.6	108170.8	41540.1	141333.3	77202.0
5099.8	2467.8	9263.8	2095.6	72067.4	83746.1	3333.3	3415.3
14449.4	4463.1	4631.9	13272.4	18400.7	88740.9	34844.4	130623.6
Polyvinyl Chloride				Nylon			
Control	Low	Medium	High	Control	Low	Medium	High
15379.6	14516.8	7936.5	3771.7	7399.5	23138.5	19596.3	14702.6
8261.6	7458.6	12282.7	9559.2	14126.4	5202.2	13577.4	24504.3
14142.7	21574.9	26770.0	11900.3	11958.8	29904.6	26063.1	7407.0
13699.3	13265.3	16628.9	10209.5	23394.5	2936.2	2687.5	10859.9
1026.9	11513.3	16943.8	15021.7	3961.4	4563.9	20324.2	8799.3
1283.6	16619.2	1196.8	7738.4	10538.7	1946.8	18476.5	4511.0
10408.6	7258.4	12912.6	16647.4	2840.2	1787.3	2435.5	15538.0
15683.0	12414.3	12786.6	1365.6	28402.2	2840.5	14193.3	4065.5
26931.8	7959.2	6550.8	19378.6	33634.2	3287.3	2799.5	15259.5
25834.9	22125.6	21290.0	10794.8	9043.9	17713.0	24719.4	24727.1
13932.6	17970.8	8125.5	3446.5	1719.1	4595.8	4927.1	19881.9
17269.9	24528.3	8881.3	9104.0	11659.9	3095.8	3275.4	8632.2
6324.5	6157.1	9133.3	11965.3	2167.5	2680.9	6186.8	4678.1
3360.6	7208.3	25006.3	25231.2	5680.5	19947.0	12401.7	12809.1
11948.9	20573.8	14235.3	10079.5	8744.9	5266.0	1875.6	46892.4
18366.8	2402.8	1196.8	18143.1	13677.9	1978.7	2155.6	8409.4
17129.9	4705.4	20219.2	5657.5	22871.3	3319.2	17160.8	16651.8
5974.5	14216.4	1070.8	18143.1	8072.2	3063.9	14725.2	20940.1
21494.1	18020.8	20093.2	20419.1	17863.5	5521.3	2575.5	15092.4
22520.9	14666.9	13038.5	6698.0	8595.4	1851.1	3471.3	3174.4
1330.3	31386.3	18770.5	1235.5	10837.7	23266.2	16768.8	5569.2
17550.0	6507.5	12849.6	6502.9	6726.8	3957.5	27518.8	13366.0

(1) M. D. Abràmoff, P. J. Magalhães and S. J. Ram, *Biophotonics international*, 2004, **11**, 36-42.