water

# Spatial–Temporal and Risk Assessment of Microplastics in the Surface Water of the Qinhuai River during Different Rainfall Seasons in Nanjing City, China

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**Supplementary Materials**

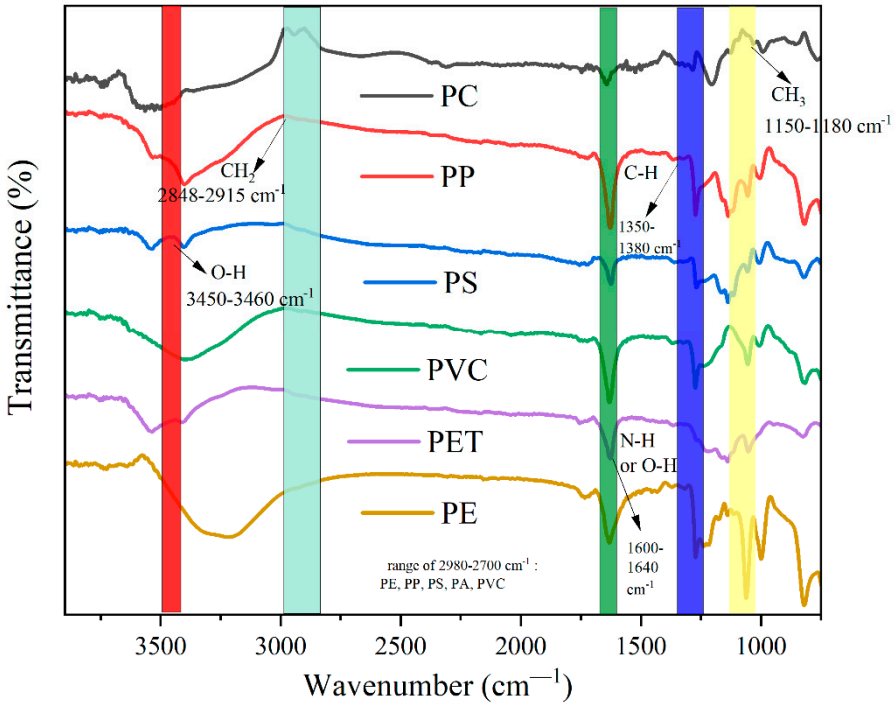



**Figure S1**. ATR-Fourier transform infrared spectra (FTIR) of the selected microplastics.

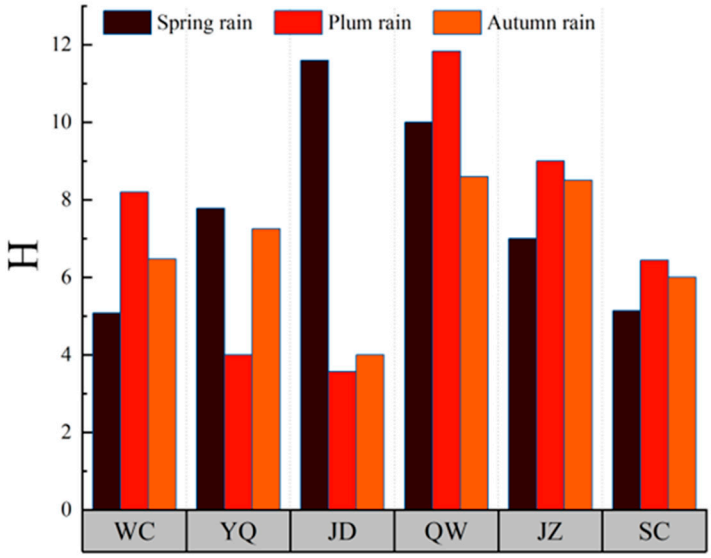



**Figure S2.** The potential risk index of different polymer type (Delete PC and PVC).

**Table S1.** Sampling locations for microplastics of Qinhuai River in Nanjing, eastern China.

| Sampling sites | Location | Longitude (E) | Latitude (N) |
|---|---|---|---|
| WC | Wucha Bridge | 118.90 | 31.77 |
| YQ | Yang Qiao(Bridge) | 118.85 | 31.88 |
| JD | Jiangjundadao Bridge | 118.77 | 31.96 |
| QW | Qiqiaowen Bridge | 118.83 | 32.01 |
| JZ | Jiezhi Estuary | 118.67 | 31.96 |
| SC | Sancha Estuary | 118.73 | 32.08 |

**Table S2.** Hazard scores for microplastic polymers.

| Polymer | Hazard score (highest level) |
|---|---|
| PP | 1 |
| PET | 4 |
| PE | 11 |
| PS | 30 |
| PVC | 10551 |
| PA | 47 |
| PC | 1177 |

**Table S3.** Categories employed in the microplastics polymeric risk assessment (H), pollution loading index (PLI).

| items | Ecological risk level | | | |
|---|---|---|---|---|
| | I | II | III | IV |
| Ecological Risk Index（H） | <10 | 10-100 | 101-1000 | >1000 |
| Pollution Load Index（PLI） | <10 | 10-20 | 20-30 | >30 |

**Table S4.** Risk level criteria for microplastic pollution.

| Value of the polymer index (H) | <10 | 10-100 | 100-1000 | >1000 |
|---|---|---|---|---|
| Spring rain | JZ (7) | | QW (500.4) | WC (1373)<br>YQ (1180)<br>JD (2357.2)<br>SC (3187.9) |
| Plum rain | WC (8.2)<br>JZ (9) | | | YQ (1958.7)<br>JD (1679)<br>QW (2162.7)<br>SC (2481.9) |
| Autumn rain | JZ (8.5) | | WC (696.4) | YQ (1473.3)<br>JD (1958.7)<br>QW (1534.5)<br>SC (1960.7) |
| Risk category | I | II | III | IV |

**Table S5.** Risk level criteria for microplastic pollution (Exclude PC and PVC content).

| Value of the polymer index (H) | <10 | 10-100 | 100-1000 | >1000 |
|---|---|---|---|---|
| Spring rain | WC (5.08)<br>YQ (7.78)<br>JZ (7)<br>SC (5.14) | JD (11.3)<br>QW (10) | | |
| Plum rain | WC (8.2)<br>YQ (4)<br>JD (3.6)<br>JZ (9)<br>SC (5.14) | QW (11.83) | | |
| Autumn rain | WC (6.5)<br>YQ (7.25)<br>JD (4)<br>QW (8.6)<br>JZ (8.5)<br>SC (6) | | | |
| Risk category | I | II | III | IV |

**Table S6**. The value of the pollution load index in each sampling sites ($C_{0i}$ takes mean value of 280 items/L, 237 items/L and 83 items/L in Spring rain, Plum rain and Autumn rain, respectively)

| Sampling sites | Value of the pollution load index (PLI) | | |
|---|---|---|---|
| | Spring rain | Plum rain | Autumn rain |
| WC | 1.22 | 1.44 | 2.94 |
| YQ | 1.28 | 1.40 | 2.58 |
| JD | 1.04 | 1.62 | 1.18 |
| QW | 1.49 | 1.48 | 2.33 |
| JZ | 1.48 | 1.34 | 1.95 |
| SC | 1.54 | 1.13 | 1.95 |