**Supporting Information**

**Up-cycling plastic waste into swellable super-sorbents**

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*Table S1: Area under the curve (AUC) and percentage of polymers in the blends.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Polymers** | **PE AUC** | **PP AUC** | **PE %** | **PP %** |
| ***PE*** | 140.95 | 0 | 100 | 0 |
| ***PP*** | 0 | 112 | 0 | 100 |
| ***PE25PP75*** | 35.2 | 83.8 | 24.97 | 74.82 |
| ***PE50PP50*** | 70.4 | 55.7 | 49.95 | 49.73 |
| ***PE66PP33*** | 92.04 | 39.1 | 65.30 | 34.91 |
| ***PE75PP25*** | 106.18 | 27.6 | 75.33 | 24.64 |
| ***PEXPPY*** | 99.1 | 33.2 | 70.31 | 29.64 |