

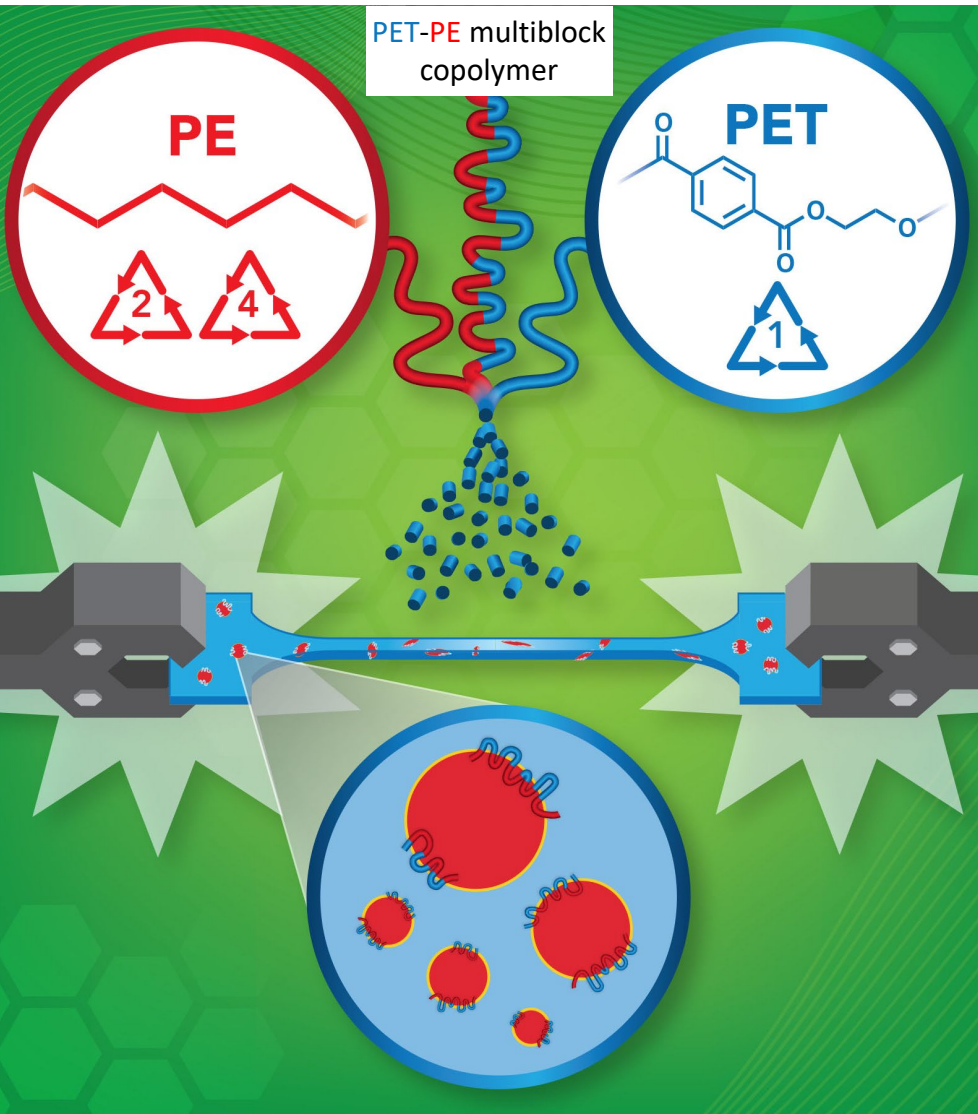
Multiblock Compatibilizers for Recycling PET and PE Mixed Waste

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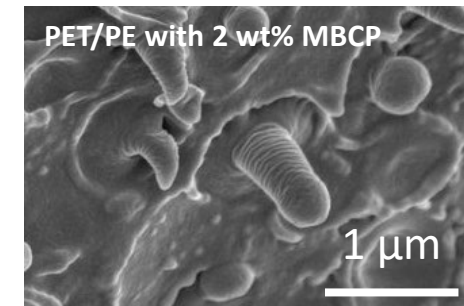
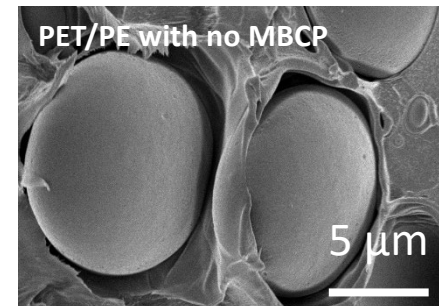


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- **Goal:** Recycling mixed PET and PE plastic waste
- **Approach:** Synthesized PET-PE multiblock copolymers (MBCP) for the first time ($M_n \approx 40$ kg/mol, 10-13 blocks)
- **Interfacial adhesion:** MBCP localizes at PET-PE interface and improves their interfacial adhesion by a factor of 800
- **Mechanical properties:** Blending only 0.5 wt % MBCP with PET-PE mixtures, in analogy to recycling, resulted in tough blends with stress transfer between domains (see below plastic deformation on right)



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Nomura, K.; Peng, X.; Kim, H.; Jin, K.; Kim, H.-J.; Bratton, A.; Bond, C. R.; Broman, A.; Miller, K. M.; Ellison, C. J. Multiblock copolymers for recycling polyethylene-poly(ethylene terephthalate) mixed waste. *ACS Appl. Mater. Interfaces* **2020**, 12, 9726–9735. DOI: 10.1021/acsami.9b20242

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