PLASTIC RECYCLING SYSTEM USING SOLVENT-TARGETED RECOVERY AND PRECIPITATION (STRAP)

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The Invention

UW-Madison researchers have developed a system to carry out solvent targeted recovery and precipitation (STRAP) and recover polymers from mixed plastic wastes. The major components in this system are: (i) a shredder that produces plastic particles with certain size and aspect ratio to be flowable and fast dissolvable; (ii) a feeder that has unique angle and variable pitch screw to help with constant flow without bridging; (iii) a dissolution vessel that has unique design for efficient mixing and drainage, with optimized process parameters; (iv) high and low temperature filters that have an active mechanism, optimized screen size and structure to separate solids and liquids with high efficiency; (v) a cooler and precipitator with high cooling efficiency, twin-screw design for self-cleaning, and optimized process parameter to achieve full precipitation with a small footprint; (vi) a solvent recovery unit that can help achieve >99% recovery rate and is able to convey the dried plastics after recovering the solvent; (vii) a distillation unit to purify the solvents when required; (viii) a heat management system that controls the temperature of all system components; and (ix) an extruder that will produce large quantities of recycled plastic pellets, and remove the remaining solvent residues during the process.

Additional Information

For More Information About the Inventors

- George Huber

Tech Fields

- Clean Technology : Other clean technologies

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854