

Image of trash pile
removed due to copyright restrictions.

Waste Problems

Anonymous students SJ, CL, and JN

Process Redesign

Issues

- ▶ Semiconductor / Electronics Fabrication
- ▶ Chemical/Pharmaceutical Manufacturing
- ▶ Coal-based Energy Generation
- ▶ Construction

Solutions

- ▶ New synthesis methods
- ▶ Different raw materials
- ▶ Friendlier power generation



Product Redesign

Issues

- ▶ Non-degradable plastics / compounds
- ▶ Toxic chemicals / pesticides / emissions

Solutions

- ▶ Development of newer friendlier compounds
- ▶ Chemical removal / cleanup systems

Photo of plastic in various stages of degradation removed due to copyright restrictions.



Mitigating Existing Trash

Issues

- ▶ Landfill methane generation
- ▶ Oil Spills
- ▶ Ocean Trash
- ▶ Space Trash
- ▶ Organic Waste
- ▶ General Littering
- ▶ Nuclear Waste
- ▶ Chemical Pollutants (fertilizers, runoff, etc.)

Solutions

- ▶ Waste conversion into usable products / energy
- ▶ Waste tagging for easy cleanup
- ▶ Waste breakdown



Trash Disposal

Issues

- ▶ High cost of recycling / waste removal
- ▶ Recycling sorting / confusion
- ▶ Certain non-disposable items
- ▶ Containment

Solutions

- ▶ Recycling awareness
- ▶ Less wasteful packaging / movement away from unfriendly products
- ▶ New and easier recycling methods



MIT OpenCourseWare
<http://ocw.mit.edu>

20.020 Introduction to Biological Engineering Design
Spring 2009

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.