About Recycletronics

1. Recycletronics™ is a division and trademark of MOLAM International

2. In business 14 years

3. Complete e-scrap processing capability - shredding, separation, size reduction and dismantling equipment, onsite hard drive destruction, TV and monitor demanufacturing and glass processing

4. $2M in R&D and Technology Innovation Budget


7. DoD electronics destruction & recycling depot ‘04-’07 SP4410-04-D-7003

8. Received Commendation as Sustainable and Environmentally Friendly Business, Georgia House of Representatives ‘08 & ’09 Resolutions 1072 & 248
e-Scrap Process, Where we are:

**Incoming Logistics**
- Date, Spec, Source ID
- Weight

**Sorting & Dismantling**

**Bale Processed Material**

**Shred & Separate**
- CRT Glass Cutting & Processing
- Shredded Steel
- Shredded Aluminum
- Shredded Circuit Board To PM Recovery
- Ledded Glass
- Unleaded Glass

**Outgoing Data**
- Weight, Spec, Invoice, Cust ID

Recovered Parts & Components

Baled Plastic

Baled Cardboard

925 Industrial Park Drive, Marietta, GA 30062
www.Recycletronics.com
770-420-5202
Recycletronics™ is a Trademark of MOLAM International
Where we are going:
Standardized Process & Closed Loop Recycling

• Invest in innovation (closed-loop-recycling)
• Share/Lease rather than sell the technology/machinery
• Create a cost effective business model
• Standardize the Process via Machinery to minimize environmental risk and maximize human safety

• Save the Environment
• Create Green Jobs
• Create a Green Infrastructure
Identify the most challenging problems

- CRT e-Scrap (TV, Monitor, …)
- Low Grade e-Scrap (Printer, scanner, copier, fax, …)

Use “lessons learned”, machinery, and new processes to develop solutions for problems
CRT e-Scrap Processing

1. Dismantle TVs and Monitors
2. Remove and prep CRT
3. Cut CRT
4. Dry clean CRT
5. Resell clean "furnace ready" glass to CRT manufacturers
6. Reuse non-resalable glass as filler to manufacture plastic lumber
CRT e-Scrap Processing Flow Diagram

TV and Monitors

- Test for reusable units
- Dismantle bad units

- Plastic
  - Furnace ready leaded glass
  - Furnace ready unleaded glass
  - Granulate glass to use as filler
  - Sell working units
  - Sell reusable Plastic
  - Sell to CRT manufacturers

- CRT
  - Furnace ready leaded glass
  - Sell working units

- Steel
  - Copper/Tin/Zinc/Lead
  - Plastic Resin
  - Plastic insulation
  - Copper
  - Sell reusable steel
  - Sell 96% pure Tin/Zinc/Lead

- PCB
  - Make lumber/boards
  - Sell reusable steel

- Copper Cable
  - Make lumber/boards
  - Sell reusable Copper

- Copper Yoke
  - Make lumber/boards
  - Sell reusable Copper

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Disassembly Station

Before

After
CRT Preprocessor

<table>
<thead>
<tr>
<th>Specification</th>
<th>Measurement</th>
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<tr>
<td>Length</td>
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<td>Width</td>
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<td>Height</td>
<td>1.75m</td>
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<td>CRT size</td>
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<td>Operator</td>
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<tr>
<td>Throughput</td>
<td>60/h</td>
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<tr>
<td>Voltage</td>
<td>220/460-3</td>
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<tr>
<td>Power</td>
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Before

![Before Image]

After

![After Image]
CRT Auto Cutter

Length  2m
Width   1.8m
Height  1.75m
CRT size 14-29 inch
Operator 1
Throughput 30/h
Voltage 460/3
Power 7KW

Before

After
# CRT Glass Dry-Washer

**Length**: 14.5m  
**Width**: 4.3m  
**Height**: 3.6m  
**Operator**: 2  
**Throughput**: 1.5-2 mt/h  
**Voltage**: 460/3P  
**Power**: 34KW

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![CRT Glass Dry-Washer](image)

### Panel Before & After

![Panel Before](image) ![Panel After](image)

### Funnel Before & After

![Funnel Before](image) ![Funnel After](image)
Plastic Lumber Extrusion Machine

Various Types of Plastic Lumber
Low Grade e-Scrap Processing

1. Shred low grade e-scrap
2. Remove ferrous material
3. Remove Aluminum
4. Remove plastics
5. Recover non-ferrous and precious metals
Low Grade e-Scrap Processing

Printer, copier, ..... 

Reusable units  Shred for commodities  Dismantle non-reusable units for parts

Manual Picking station  Cross belt magnet

ABS/PC plastics desirability, size  Mix-plastics, rubber, copper, Aluminum, precious metal bearing  Ferrous material

Electro-statically separate non-ferrous metals from non-metals

Granulated non-metals  Non-ferrous metal nuggets

Sell reusable units  Sell reusable plastics  Make plastic lumber/boards  Sell non-ferrous to smelters  Sell reusable steel  Sell reusable parts
Pulverizor/Granulator with Air Filtration System
Electrostatic Separator
Summary

Closed Loop Recycling

Profitable business model eliminates need for shipment of unprocessed e-waste overseas

Consistency via machinery standardizes the process and end products for our industry

Sustainable Green Infrastructure

Green Jobs