

## ***Packaging Systems and Design - Equipment Wish List 2011***

<b>Equipment Needed</b>	<b>Justification</b>
<b>3D Scanner</b>	Accelerate the primary package and product design
<b>Texture analyzer and/or MTS 250lbs load cell</b>	Testing various mechanical properties of packaging products and contents
<b>Rapid Prototype maker</b>	Rapid prototyping and primary packaging design concepts
<b>Gas Permeability Tester (O2, H2O, CO2)</b>	Study the interaction between packaging materials and products
<b>Digital printer</b>	Package design concepts, printing and labeling studies
<b>Bench top Extruders (single/twin screw type for casting or blown film)</b>	Primary units for packaging polymers and production areas
<b>Digital Micrometer</b>	Measuring thicknesses
<b>Vacuum sealer</b>	Producing vacuum packaging system
<b>SolidWorks CAD program</b>	Accelerate product design
<b>Controller for the vibration table</b>	The current controller barely works
<b>Hot seal maker</b>	Study the sealing effect of packaging materials
<b>UV/Visible/Fluorescent/Chemiluminescent spectrometers</b>	Design smart packaging sensor for food packaging
<b>Melt Index/Rheometer</b>	Understand the viscosity of plastic polymers
<b>Colorimeter</b>	Measure optical transparency
<b>Bench top Injection/Blow molding machines</b>	Understand rigid plastic packaging productions
<b>Newer HPLC/GC-MASS spectrometer</b>	Analyze various physical properties of packaging materials and systems
<b>DSC/DMA/TGA/TMA</b>	Understand thermal properties of packaging materials

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