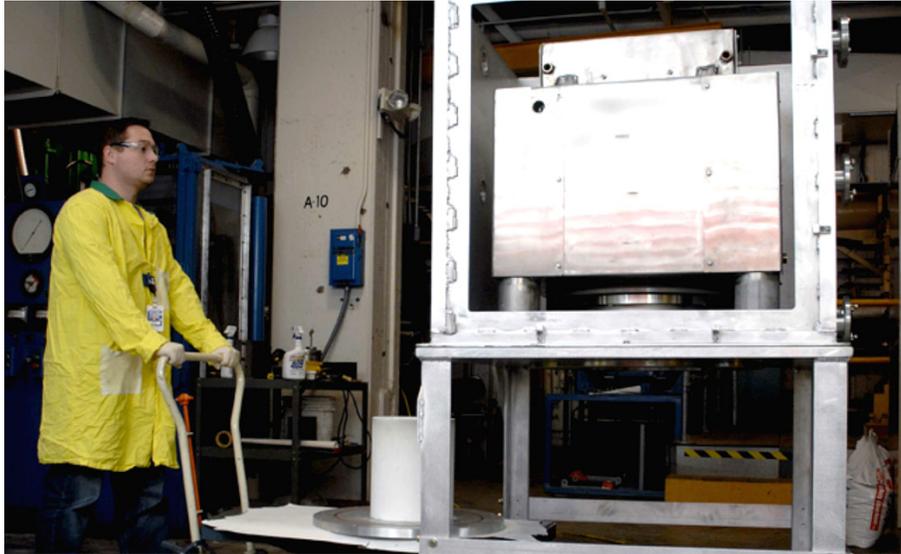


Infrared (IR) Debonding



Infrared (IR) Debonding is a dry, nondestructive method of using heat to separate components joined by adhesives. It is safer and better for the environment than debonding techniques currently in use. The method has many permutations, lending itself in separating a myriad of different materials bonded by a wide variety of substances. The technology involves the use of a portable IR apparatus within which debonding is accomplished.

MATERIALS PROCESSING AND MACHINING

Features

- Eliminates most mechanical processing
- Applies directional heat, without the use of a susceptor
- Can be easily repositioned and located
- Designed to be operated with minimum physical effort

- Repair operations involving defective components
- Component recovery
- Manufacturing quality control
- Recycling

Benefits

- Materials or components are not damaged or abraded, allowing for preservation or reuse
- IR heating is instantaneous and rapid, shortening schedules
- Uses less energy than conventional methods, minimizing costs
- Debonded items can be easily removed from the apparatus, allowing quicker processing
- Physical activity required is minimized, eliminating many hazards to workers

Patents & Awards

- U.S. Patent No. 7,896,053
- Technology Ventures Corporation–featured technology, 2012

Inventors

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Technology Readiness Level (1–9)



Actual application of the technology in its final form and in Y-12 production use.

Applications

- Dismantlement and salvage operations

Partnering Opportunities

Y-12 is seeking an industry partner to fully commercialize this technology.

**If you would like more information, please contact the
Office of Technology Commercialization and Partnerships:**

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(865) 241-5981

<http://www.y12.doe.gov/technologies>