Spinoffs- From Medicine To Metals Recycling

Spinoff applications for technologies can rarely be planned and are often the most difficult to track. Yet, spinoffs have been important success stories in the Fossil Energy program. Three of the most prominent are:

Using laser imaging technology developed for coal slurries, a federal researcher analyzes simulated blood flow through an artificial heart.

Researchers at the DOE Federal Energy Technology Center and the University of Pittsburgh Schools of Medicine and Engineering ...saw how a DOE-developed imaging device could help medical researchers understand how dangerous clots might form in and around an artificial heart pump.

A Better, Safer Artificial Heart

The flow of blood through an artificial heart may seem far removed from the flow of coal slurries through a combustor nozzle, but researchers at the DOE Federal Energy Technology Center and the University of Pittsburgh Schools of Medicine and Engineering saw some beneficial similarities. They saw how a DOE-developed imaging device could help medical researchers understand how dangerous clots might form in and around an artificial heart pump.

Using laser imaging and other advanced equipment originally developed at the Center to study the microscopic flow of coal liquids, the medical researchers were able to improve the design of the artificial heart pump, and later an artificial lung device, to minimize areas where blood stagnation could promote clotting.

Industrial Coal Furnace Technology to be Used byAluminum Industry

A DOE Fossil Energy program to develop an industrial coal-fired process heater has led to a new, more cost-effective way to recycle aluminum potliner. DOE's industrial research partner, the Vortec Corp., licensed the furnace technology to a major aluminum producer which will install it in a commercial recycling facility. The technology will be used to melt spent aluminum potliner to prepare it for recycling. The technology also has a wide range of other applications, including vitrification of low-level radioactive waste and the production of glass fibers from such sources as boiler ash, sewage sludge ash, and glass wastes.