Center for Supercritical Fluid Separations

Milton L. Lee/Brigham Young University/Provo, Utah

Established as a center in 1986. Received "Distinguished Center" status in November 1991. The Center provides a focal point for research and development, education, and training in the area of chemical analysis where high resolution separations and high sensitivity detection are emphasized.

Overview

1994-95 State Contract	$100,000
Matching Funds	$112,432
Cumulative	$3,441,526
Center Related Jobs	17
Industry Jobs Created	21
Benefiting Utah Companies:	
1994 Spin-off Companies	0
Cum. Spinoff companies	2
Patents Applied	0
Patents Issued	9
License Agreements	3

Technologies

- **Supercritical fluid chromatography**
- **Supercritical fluid extraction**
- **Radiofrequency plasma** detection
- **Time-of-flight** mass spectrometry
- **Column technology** for capillary chromatography and electrophoresis

Note: Milton Lee received an R&D 100 Award in behalf of Sensar Corporation and the inventors at BYU for the TOF 1000 time-of-flight mass spectrometer. This award is given each year nationally for the 100 technologically most significant products developed.

Status

- **Supercritical fluid** chromatography: Developed a new method for the group-type analysis of petroleum hydrocarbons that is based on the use of packed capillary supercritical fluid chromatography. Have transferred the technology to Dionex and are currently working out the final technical details.
- **Continuing evaluation** of a modifier addition module for supercritical fluid chromatography.
- **Detection**: Continuing the construction of the new vacuum system for the plasma time-of-flight mass spectrometer. Components are being machined and will be assembled and evaluated.

Economic Impact

- **Dionex Corporation,** $1 million estimated dollar value to the state of Utah.
- **Sensar Corporation,** $694 thousand estimated dollar value to the state of Utah. The current annual payroll for the eleven employees at Sensar is over $540,000. Job creation is expected to be 30-50 jobs over the next three years.