



Breakthrough Fluorine Chemistry for PET Imaging

2124 Y Street, Flat 101
Lincoln, NE 68503
www.gfpharma.com



Fast Facts

Founders:	Stephen DiMagno
Date Founded:	2012
Employees:	2
Headquarters:	Lincoln, NE
Revenue:	N/A
University:	University of Nebraska
Federal Funding Agency:	National Science Foundation
Initial Research Funding:	\$420,000

Ground Fluor Pharmaceuticals Inc. is a biomedical company developing new imaging agents for use in diagnosis and management of disease, and to help other companies better manufacture imaging agents for positron emission tomography (PET) scans. GFP's PET products are based on its novel platform technology, SWIFT™, Swift Iodonium Fluorine Tagging. SWIFT™ chemistry makes it possible to produce F18 radiopharmaceuticals rapidly, in much higher yields, with much higher potency and more reliably than current methods. SWIFT™ chemistry allows the routine clinical production of agents that cannot be otherwise manufactured economically and reliably.

The Story Behind the Company

University of Nebraska-Lincoln chemistry professor Stephen DiMagno received a grant in 2007 from the National Science Foundation to study the chemistry of anhydrous fluoride salts to develop new synthetic methods to fluorinate compounds. Fluorinated compounds are commonly used in medicines, and also in medical imaging.

Ground Fluor Pharmaceuticals, Inc., (GFP) is the exclusive worldwide licensee of the breakthrough iodonium chemistry for the rapid, carrier-free, high-yielding synthesis of F18 PET imaging agents developed by DiMagno. SWIFT™ technology allows Swift Fluorine Tagging of small aryl fluoride molecules, which are present in natural products, and therapeutically important compounds such as positron emission tomography (PET) tracers and pharmaceuticals.

These imaging biomarkers have potential application in brain cancer, Parkinson's disease, and other diseases. GFP's novel biomarkers will support pharmaceutical development of new effective therapeutic agents by providing a tool for the rapid assessment of in vivo biodistribution and drug targeting.

Trak Surgical Inc.

Scott Technology Center, Suite 150
6825 Pine Street
Omaha, NE 68106
www.traksurgical.com



Fast Facts

Founders:	Hani Haider, O. Andres Barrera, Ibrahim Al-Shawi
Date Founded:	2012
Employees:	4
Headquarters:	Omaha, NE
Revenue:	N/A
University:	University of Nebraska
Federal Funding Agency:	Department of Defense (Office of Naval Research)
Initial Research Funding:	\$4.2M

Trak Surgical was formed in 2012 to commercialize the company's freehand navigation/computer aided orthopedic surgery technology called *Trak Guided Surgical System*.

The breakthrough technology offers the first computer-assisted system for joint replacement surgery that works without implant specific mechanical jigs, without expensive and cumbersome robots, and optionally without external navigation tracker equipment. It facilitates navigated freehand bone cutting with real-time 3D graphical feedback. The *Trak Guided Surgical System* transforms traditional orthopedic power instruments into "smart instruments" that can track themselves in 3D around the surgical scene and prevent the surgeon from deviating from planned cuts. In bench experiments, this cutting-edge technology promises faster, cheaper, easier and more accurate bone cuts. It naturally assists the surgeon with miniaturized electronics on-board the same powered bone cutting instruments with which they are accustomed.

The Story Behind the Company

Trak Surgical is the result of 12 years of research and development coming out of the innovative laboratory of Professor Hani Haider at the University of Nebraska Medical Center (UNMC).

A successful joint replacement requires a talented surgeon with a mastery of skills gained through countless hours of experience and repetition. Success also requires a complement of specialized nurses, staff and costly equipment. Haider, a biomedical engineer and professor of orthopedic surgery research at UNMC who had previously worked in fluid dynamics, knew there had to be a way to improve hip and knee replacement surgeries. The *Trak Guided Surgical System* is the outcome of his research.

The initial research and development that led to Trak Surgical was conducted at the University of Nebraska Medical Center. In 2010, Dr. Haider received a large grant from the Office of Naval Research that enabled the development of the prototype technology that is being commercialized.