

EVOLUTION

From Innovation to Industry

A publication of
University Technologies International

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IGNITE Company Profile: Profero Energy Spark Meets Fuel for IGNITE Company

IGNITE

As the one-year anniversary of UTI's IGNITE program approaches, one of its first companies, Profero Energy, prepares for a bright future. The focus of Profero Energy is the conversion of unrecoverable heavy oil deposits into natural gas. The technology behind Profero's technique is based on the research of Dr. Steve Larter and Dr. Ian Gates – researchers from the University of Calgary – and Dr. Ian Head from the University of Newcastle.

Currently, many heavy oil companies are forced to abandon production wells with 80–90 percent of the assets still in the ground. This is where Profero steps in. Profero technologies are designed to recover additional heavy oil and gas assets from wells that no longer produce economically viable product. This is achieved by accelerating and controlling the natural biodegradation of complex hydrocarbons into methane and/or hydrogen. The key element of the technologies is a deep understanding of biodegradation of oil into methane as it occurs naturally in reservoirs. By removing

rate-limiting factors and accelerating these natural processes, methane can be recovered in an economically viable time frame. An anticipated advantage of this process, in addition to extracting additional resources from currently unproductive wells, is that there will be minimal environmental impacts, because existing well infrastructure sites are used and the outcome produces a cleaner source of fuel – natural gas.

Profero is in discussions with heavy oil producers to plan for its next phase, which is to conduct its first field tests to determine the level of biodegradation required to stimulate the production of natural gas. The company's objective is to be producing commercial amounts of natural gas in four years.

For more information on Profero Energy, contact David Rafter at 270-2437.

AHFMR Awards Second Year Funding



AHFMR

ALBERTA HERITAGE FOUNDATION
FOR MEDICAL RESEARCH

University Technologies International (UTI) is pleased to announce year-two funding approval in the amount of \$185,000 from the Alberta Heritage Foundation for Medical Research (AHFMR). This funding is part of AHFMR's ForeFront Program and includes an \$80,000 Executive-in-Residence Award. It allows UTI to continue to provide experienced and highly qualified personnel for its company creation division "IGNITE". The funding also includes a \$105,000 Block Grants Award for Early Stage Commercialization Support, allowing UTI to identify, assess and strengthen commercialization opportunities in the medical/health technologies sectors.

The Executive-in-Residence Award supports UTI's IGNITE group. IGNITE's mandate is to identify and commercialize technologies through creating viable, sustainable, early-stage technology-based companies, of which the Executive-in-Residence (EIR) program is an integral part.

The Block Grants Award supports UTI's Licensing and Business Development effort which focuses on screening technologies for feasibility and commercial potential. Last year, UTI was able to apply the AHFMR Block Grant funding to eight technologies. Funds were used to enhance the commercial viability of technologies by strengthening patent claims, leveraging other available funds and increasing the attraction for licensees.



SAIP Network:

SAIP Network Funding:

Forty thousand dollars of funding from the SAIP Network Demonstration and Prototype Development Fund are moving the following projects forward in southern Alberta:

1. University of Lethbridge – Bi-Directional Bicycle Pedaling System (\$20,000).
2. Olds College – Integrated System for Storage, Blending and Dispensing of Biodiesel (\$20,000).

UTI is the administrative manager of the Network. For more information on these projects and the related Development Fund, please contact Janet Scholz directly at scholz@uti.ca or visit www.saipnetwork.ca.

SAIP Network Annual Conference

Thursday, April 10, 2008

The Innovation Continuum, from Concept to Commercialization

University of Calgary
Calgary, Alberta
Alberta Room, Dining Centre
8:00 a.m. – 4:30 p.m.

For up-to-date details on this event and others, please go to www.saipnetwork.ca

SAIP Network: Sponsored Project Profile

Red Deer College: Portable Biodiesel Production System



SOUTHERN ALBERTA INTELLECTUAL PROPERTY NETWORK

Ever wonder what happens to the oil that your fries are cooked in? One researcher at Red Deer College (RDC) is giving that oil a closer look and exploring a way to put it to use. Len Aucoin, a plumber and mechanic by trade and an instructor at RDC, is working on developing a portable system that can produce biodiesel from canola waste. Len, who has a strong interest in biodiesel, first developed a unit of his own, using restaurant waste canola oil. He used this fuel to power his own diesel vehicles and also burns biodiesel in his house and shop furnace.

To continue with the research on this system RDC applied for, and received, funding from the SAIP Network. This funding, along with matching funding from AACTI (Alberta Association of Colleges and Technical Institutes), allowed Red Deer College to release Len from teaching for four months to focus on the project. It also allowed RDC to purchase materials to develop a prototype, conduct experimental testing and hire a student to produce a user manual.

What makes Len's biodiesel system unique is that it is one of only two units in Canada that claim to produce ASTM (American Society for Testing Methodology) quality fuel and meet or exceed the CSA (Canadian Standards Association) criteria for fuel production. The

goal for Len and his team is to create a simple system that consistently produces the same quality fuel, regardless of the combination of canola waste input.

The anticipated preliminary markets for the Portable Biodiesel Production System are colleges, institutions, hotels, farms and small fleet operators that use diesel vehicles. The benefit of using the fuel produced by the system is that there is an estimated 68 percent reduction in carbon emission over petro/regular diesel. In addition, vehicles using biodiesel can potentially save eight tonnes of carbon per year. Restaurants also benefit, as they currently have to pay to have their canola waste removed.

Red Deer College is currently in the process of testing its system and hopes to sell five to six prototypes over the next year. In addition, completed patent and freedom to operate work shows positive commercial potential.

Next time you sit down for a plate of fries, the energy you receive may not be the only energy produced!

For more information about this project or how to become a prototype site, contact Rick Tofani, Director, Applied Research & Innovation, Red Deer College at 403-343-4070 or at rick.tofani@rdc.ab.ca.

For more information about the SAIP Network, please contact Janet Scholz at scholz@uti.ca or visit www.saipnetwork.ca.

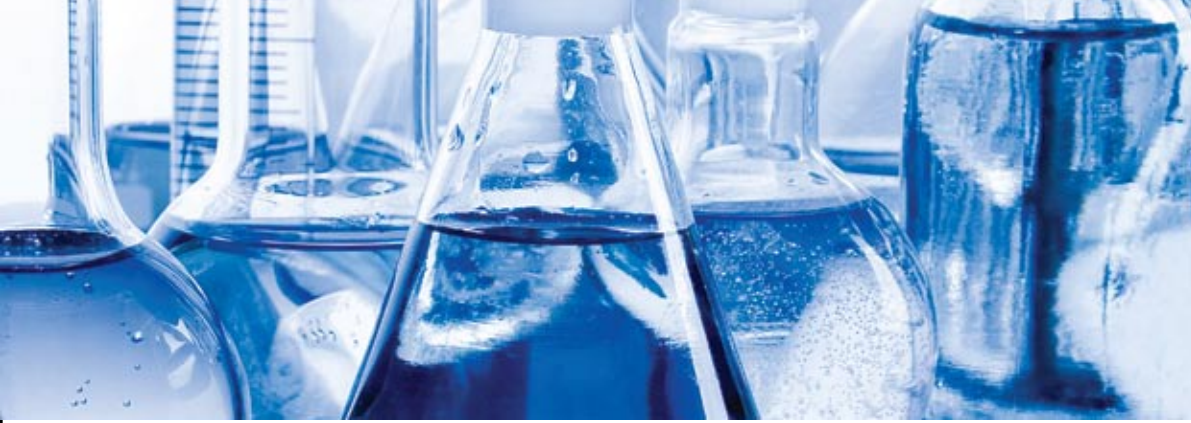
Technology in Profile

New Technology Explores Alternative Treatment for Autoimmune Disorders

Dr. Barabas is no stranger to overcoming challenges and pursuing his goals with passion and determination. As a child in Hungary in the 1950s, he was once told by his teachers that he would never have the opportunity to attend university. Fifty years later, with a PhD and extensive work in an experimental autoimmune kidney disease at the University of Calgary, Dr. Barabas and his colleagues continue to tackle challenges head-on. This time, the challenge is to find - using the immune system's natural ability - ways to prevent and treat

chronic disorders such as autoimmune diseases and cancer. Dr. Barabas and his team are focusing on developing a new vaccination technology to redirect the immune system's function, specifically without side effects. This new immunization method is called Modified Vaccination Technique (MVT).

There are currently two forms of immunization: Active Immunization that relies on an individual's immune system to respond by producing specific antibodies against an injected antigen (e.g., bacterial and viral



products) to prevent a specific disease, and Passive Immunization that relies on the injection of antibodies to attack a specific antigen. While both immunization techniques are extremely valuable in today's medical arsenal, neither of these forms of immunization can specifically prevent nor treat chronic ailments. This is where Dr. Barabas' work comes in. The theory behind MVT is that the immune system has the natural ability to correct mistakes, and that by injecting the exact immune-complex (antibody and antigen), predetermined information can be transferred to a recipient's immune system to initiate and maintain specific immune responses. The advantages of the preformed immune complexes – shown in the experiments performed to date – are that they are specific in their actions, non-toxic, non-irritant, cause

no disturbance in the overall regulatory function of the immune system and produce no side effects.

Dr. Barabas believes that the proper implementation of the MVT holds the promise of both preventing and curing chronic disorders without using presently utilized treatment options.

So far, the MVT has been successful in producing the desired immune outcomes in nine separate animal experiments. Further experiments are taking place, and Dr. Barabas and his team are working with University Technologies International to seek further partnering and licensing opportunities to move their work to the next stage.

For further information on this technology, please contact: Theo Eystathioy, Technology Analyst, Medical & Life Sciences at eystathioy@uti.ca.

In the Spotlight

Dr. Ayman Habib, Schulich School of Engineering



Dr. Ayman Habib

Dr. Habib is a Professor in the Department of Geomatics Engineering at the University of Calgary and head of the Digital Photogrammetry Research Group in the Schulich School of Engineering. He studied in both Egypt and the United States

and has a PhD in Geodetic Science with a specialty in Photogrammetry, and Remote Sensing. He has won a number of awards since joining the University of Calgary in 2002. He was chosen as 2004/2005 Professor of the Year by the students of Geomatics Engineering at the University of Calgary; he was the 2005/2006 recipient of the Research Excellence Award from the University of Calgary's Department of Geomatics Engineering; and he received the 2007/2008 Graduate Educator Award from the University of Calgary's Department of Geomatics Engineering.

His current work involves developing new techniques for dealing with sophisticated imaging systems for the purpose of deriving accurate three-dimensional information from two-dimensional images. This is known as photogrammetry.

Although photogrammetric operations can be complicated, Dr. Habib is working on removing some of the complexity by developing software that increases the automation in performing camera calibration. Over the years, a wide diversity of expected users has created the need to develop a convenient calibration procedure that does not require professional photogrammetrists and/or surveyors. This is where Dr. Habib's technology plays a significant role. It introduces a methodology for calibrating medium-format digital cameras using automatically extracted linear features and point targets from the images. This increased automation allows for more people to do accurate mapping at a cost that is more affordable than other methods, while still providing very precise information. With the anticipated increase in a broader base of users, automated and accurate camera calibration procedures are essential. Therefore, in addition to his work on the technology, Dr. Habib is also working with provincial, national and international organizations on developing guidelines for regulating the use of these cameras in photogrammetric applications.

For more information on Dr. Habib and his work, please visit <http://dprg.geomatics.ucalgary.ca> or email him at habib@ucalgary.ca.

For more information on licensing opportunities for Dr. Habib's calibration software, please contact Leah McCartney at mccartney@uti.ca.

Myth:

University technology transfer has limited benefits.

Facts:

Did you know?

- Licensing of innovations by universities puts money back into the economy.
- This leads to the start-up of companies, jobs, and opening up of new markets.
- This, in turn, improves the overall quality of life through the invention of new products and services.

UTI Staff

We would like to hear from you. Please contact any of our staff with your inquiries, thoughts or insights.

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UTI Welcomes Ten New Employees

UTI has hired ten new employees over the past few months to join our growing team. Our continued efforts to offer the highest levels of service to our clients and to expand our technology commercialization capabilities are made even more attainable through the addition of this new group of highly educated and experienced individuals.

Amit Jhas: Technology Analyst, Engineering & Physical Sciences. Amit brings to UTI knowledge in Material Science, Nanotechnology, Electrochemistry, and Medical Device development. Amit has an M.Sc. in Chemistry, which was supported by the Alberta Heritage Foundation for Medical Research (AHFMR), and a B.Sc. in Biochemistry from the University of Calgary.

Robert Carruthers: Technology Analyst, Engineering & Physical Sciences. He received his M.Sc. in Electrical Engineering from the University of Alberta in 2007 in the iCORE Wireless Communications Laboratory. He also received his B.Sc. in Electrical Engineering from the University of Alberta in 2003.

Andres Cortes: Haskayne School of Business MBA Intern. He is working with the IGNITE team in the development of potential start-up companies. He received his Bachelor of International Business from the Monterrey Institute of Technology in 1996.

Marinela Ionita: Manager, Intellectual Property Administration. Familiar to IP practices, Marinela has gained four years experience with IP at Smart Technologies and Bereskin & Parr LLP in Toronto. She has her ILOC Associate Law Clerk Certificate from Seneca College.

David Reese: Project Manager, Engineering & Physical Sciences. Prior to joining UTI, David worked at the University Health Network in Toronto as a Senior Business Development Officer. He holds an M.B.A. from the Schulich School of Business in Toronto and an M.Sc. in Biology from McGill University.

Sherry Wei: Senior Accountant. Sherry joined UTI in November of 2007. In her position, she is responsible for accounts receivable and payable, as well as subsidiary and portfolio companies accounting. She is working towards her certification as a General Accountant here in Calgary.

Ayu Deririta: Bookkeeper. Ayu is supporting the Finance and Administration team as their bookkeeper. She is working part-time to assist them with filing, copying and all other related accounting tasks.

Julie Elliot: Senior Accountant. Julie comes to UTI from Invermere. She has three years accounting experience and is currently working towards her certification as a General Accountant.

Murray Stene: Manager, Finance & Accounting. In his position, Murray is in charge of UTI's reporting and audit preparation for subsidiaries; general ledger and reporting integrity; recommending and implementing the organization's overall financial policies, guidelines and controls; and supporting the VP Finance in exercising financial discipline and financial direction for the organization.

Jord Cowan: Analyst, Early Stage Technology. Jord joined UTI in February of 2008. He is working with the IGNITE team in assessing the start-up potential of new companies. He holds a Bachelor of Science in Biochemistry with a minor in Chemistry from the University of Calgary. Prior to working at UTI, Jord was an associate with Argon Venture Partners and also an analyst for the Venture Alberta Forum.



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