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Revolutionary biodiesel discovery starts at Augsburg

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At a joint press conference held this morning in Science Hall 302, Augsburg College and SarTec Corporation officially announced the discovery of a chemical process that could free the United States from its dependence on petroleum diesel fuel. This revolutionary method to make biodiesel started with the curiosity of Augsburg chemistry senior Brian Krohn and ended with three Twin Cities scientists creating the "Mcgyan Process."

Brian initiated his summer research project by deciding to study new ways to produce biodiesel. After Brian's preliminary research, his professor advised him to contact chemist Dr. Clayton McNeff, an Augsburg alumnus and vice president of SarTec. McNeff, his chief scientist Dr. Ben Yan, and Augsburg's Professor Arlin Gyberg took Brian's idea and created a chemical reaction that has never before been described in scientific literature. As a result of the Mcgyan Process discovery, McNeff co-founded Ever Cat Fuels based in Anoka. It is the only plant in the world using this new method to manufacture biodiesel.

Industry analysts have been surprised by how well the Mcgyan Process works and its implications for fuel production worldwide. This process has many advantages over previous biodiesel production methods. It can convert a much wider range of feedstock oils and animal fats into biodiesel, including the byproducts from ethanol production. The Mcgyan Process recycles the catalyst and alcohol necessary to make biodiesel, it reduces the reaction time from hours to seconds, and it doesn't use water or dangerous chemicals. In short, it can make more biodiesel quickly and with a minimal impact on the environment.

Click for a description of the process by Dr. McNeff
(QuickTime video, ~4 min., 6 MB)

Because the Mcgyan Process can use a wider range of renewable oils, it has opened the door to a truly Earth-changing possibility. Algae that capture carbon dioxide can be a source of Mcgyan feedstock oil. The use of algae oil simultaneously reduces the demand on arable land for fuel purposes and scrubs the atmosphere of a greenhouse gas. SarTec has conducted research into using algae oils to supply the Mcgyan Process. The corporation is working on the use of algae to reduce emissions from coal-fired power plants while creating a biodiesel feedstock.

A patent is now pending on the Mcgyan Process which is named for the three scientists officially credited with the discovery (McNeff, Gyberg, and Yan). Ever Cat Fuels Corporation is currently producing 50,000 gallons of biodiesel per year and is using it as a power source. Its production capacity will increase to 3 million gallons per year when its new plant begins operation in Isanti later this year. Then, Ever Cat Fuels hopes to sell the technology and equipment to nations around the world.

All of these remarkable discoveries started with Brian's experiential learning at Augsburg, which is a fundamental part of the college's learning environment. His research will lead Brian to a promising future in science and create opportunities for Augsburg students for years to come. "This one-on-one relationship between professor and student may result in one of modern day's greatest discoveries," says Augsburg President Paul Pribbenow. "Augsburg is proud to be in the forefront and grateful that it may lead to a source of on-going funding that will enable us to take our science program to great heights."

Media Coverage

The biodiesel press conference garnered attention in local and even international media. Here is a list of links to a sample of that coverage:

> ABC News - http://abcnews.go.com/GMA/story?id=4746112&page=1

> WCCO News - http://wcco.com/national/algae.energy.independence.2.731292.html

> Pioneer Press - http://www.twincities.com/ci_9088075

> KSTP 5 News - http://kstp.com/article/stories/S371712.shtml?cat=1 (both include video)
http://kstp.com/article/stories/S425806.shtml

> KARE 11 News - http://www.kare11.com/news/news_article.aspx?storyid=501156 (includes video)

> Star Tribune - http://www.startribune.com/local/north/25137194.html and
http://www.startribune.com/16404276.html and
http://www.startribune.com/business/16663456.html

> Duluth Budgeteer News - http://www.duluthbudgeteer.com/articles/index.cfm?id=21755&section=homepage

> Green Car Congress - http://www.greencarcongress.com/2008/03/researchers-dev.html

> Business Week - http://investing.businessweek.com/

> Automotive World - http://www.automotiveworld.com/AEA/content.asp?contentid=66961

> Biodiesel Magazine - http://biodieselmagazine.com/article.jsp?article_id=2381&q=&page=all
http://www.biodieselmagazine.com/article.jsp?article_id=2231