October Meeting: Producing Fischer-Tropsch Liquids from MSW (Municipal Solid Waste)

Fulcrum BioEnergy has designed a process, using thermochemical processing, to convert municipal solid waste (MSW) into Fischer-Tropsch liquids. The process uses existing technologies to synthesize the FT liquids: Steam Reforming and partial oxidation of the MSW; gas cleanup and compression; Fischer-Tropsch conversion to alkanes; then hydro processing and purification. These processes have been tested and proven in a process development unit (PDU). These processes have been demonstrated and the company is nearing construction of its first plant, which has been awarded a USDA loan guarantee and a DOD grant. Detailed engineering will begin shortly with operations scheduled for late 2016.

Lewis Lee Rich, Vice President of Engineering and Operations. Lee brings to Fulcrum a unique perspective on engineering, acquired from more than 30+ years of domestic and international experience in the chemical and energy industries. Lee has a B.S. in chemical engineering from the Georgia Institute of Technology. He holds an M.B.A. from the University of Tulsa and an M.A. in interdisciplinary studies from the University of Houston.

September Meeting Thank You

WSCAIChe would like to extend a thank you to Kathleen Shell, CEO of aeSolutions. She presented a well received presentation on the challenges that chemical producers are facing and a number of the best practices that are evolving as a result of recent incidents and accidents.
OCTOBER Meeting Information

Main Topic: Producing Fischer-Tropsch Liquids from MSW (Municipal Solid Waste)

Special Topic: Advice, Beyond Investing: the changing role of Financial Advisors
a 5 Minute Chat with Greenville UBS Branch Manager - Curt Hall

DATE: Tuesday, October 14, 2014
TIME: 6:00 PM Social and 6:30 Dinner
       6:45 PM Special Topic and 7:00 PM Main Presentation

LOCATION: The Madren Conference Center and Inn at Clemson
           230 Madren Center Drive, Clemson, SC 29634-5673
           (864) 654-9020; Google Maps

DIRECTIONS: www.clemson.edu/centers-institutes/madren/directions.html
Take Interstate-85 south to exit No. 19B.
Exit toward Clemson University (Follow the Tiger Paws).
Follow U.S. 76/S.C.28 West for about 12 miles.
At traffic light by the Army Reserve Center, turn left onto Perimeter Road (Pearman Boulevard).
Go about one mile to the first traffic light and turn left onto Cherry Road.
Go 1/2 mile and take the first right onto Old Stadium Road.
Go 1/3 mile and turn left onto Madren Center Drive.
You have just reached the Conference Center and Inn.

COST: $10 for Members, $15 for Non-members
Free to Attend Presentation Only

Persons interested in car-pooling from Greenville to Clemson may choose from two potential locations:
5PM at the parking lot of the Greenville Hilton, located near Haywood Road and I-385 on Orchard Park Drive. Or an alternate location off of 85/August Road/Hwy 25. Please include car-pooling request in your RSVP.

Please reply by 5PM - Friday, October 10th, 2014
Try the old fashioned phone call to Secretary - Conny Walker (864) 483-2920
Or use the turn-of-the-century email to the same at sec@wscaiche.org

Or try using our Facebook Event - Clemson - Fischer-Tropsch Liquids from MSW
This Month join us for a Special Information Meeting preceding our Main Topic

Advice, Beyond Investing –
The Changing Role of Financial Advisors

A 5 Minute Chat with Greenville UBS Branch Manager - Curt Hall

Curt leads UBS’s Upstate South Carolina business. Previous roles include, Branch Manager, Chicago Tower, Northwest Regional Sales Manager based in San Francisco, Branch Manager and National Sales Manager of UBS’s Australian Business, Sales Manager in Charlotte, North Carolina, and a Wealth Management Analyst in Washington, D.C., covering the Mid-Atlantic Region. Curt joined UBS in New York, NY, as a Wealth Management Associate in 2002. Curt received a B.A. from the University of Virginia and an M.B.A. from The McColl School of Business.

### 2014-2015 Calendar of Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Topic and Speaker</th>
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</thead>
<tbody>
<tr>
<td>14 Oct 2014</td>
<td>Clemson University Madren Center</td>
<td>Producing Fischer-Tropsch Liquids from MSW - Lee Rich, Fulcrum BioEnergy</td>
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<tr>
<td>11 Nov 2014</td>
<td>Stax Grill</td>
<td>Statistical Process Control, Rich Osborne, InfinityQS</td>
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<td>13 Jan 2015</td>
<td>TBD</td>
<td>PSM Reprise - Bruce Stevens, AMEC</td>
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<td>10 Feb 2015</td>
<td>TBD</td>
<td>Joint meeting with the Clemson Student Chapter</td>
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<tr>
<td>Mar 2015</td>
<td>Greenville, SC</td>
<td>Michelin Training Center</td>
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<tr>
<td>Mar 2015</td>
<td>Greenville, SC</td>
<td>Science Fair Judging for the Greenville County Science Fair</td>
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<tr>
<td>Apr 2015</td>
<td>Inman, SC</td>
<td>Plant Tour - Milliken</td>
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<tr>
<td>May 2015</td>
<td>TBD</td>
<td>Family Social</td>
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October 28 - Innovision Forum Oktoberfest

Go celebrate Oktoberfest & hear how owners of local breweries started their businesses & what has made them successful.
Stay for networking and enjoy grilled brats, sauerkraut, beer and more!

DATE: Tuesday, October 28, 2014
TIME: 3:30 pm - 5:00 pm Presentation
       5:00 pm - 7:00 pm Networking
PLACE: The VERANDA
       28 GLOBAL DRIVE
       GREENVILLE, SC 29607
RSVP: RSVP to Angela Halpin at
       ahalpin@mcnair.net
       or 864.552-9345

2014-2015 Officers and Executive Committee

This is YOUR local section of the American Institute of Chemical Engineers
If you are a member with a desire to serve, please contact any of the Officers or Executive Committee members listed below.

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NAME</th>
<th>EMAIL</th>
<th>PHONE</th>
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</thead>
<tbody>
<tr>
<td>Chair</td>
<td>Alan Vibber</td>
<td><a href="mailto:alan@vibber.com">alan@vibber.com</a></td>
<td>864-554-3906</td>
</tr>
<tr>
<td>Vice-Chair</td>
<td>Mary Ferris</td>
<td><a href="mailto:MaryFerris@charter.net">MaryFerris@charter.net</a></td>
<td>864-498-3436</td>
</tr>
<tr>
<td>Secretary</td>
<td>Conny Walker</td>
<td><a href="mailto:sec@wscaiche.org">sec@wscaiche.org</a></td>
<td>864-483-2920</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Jacob Lindler</td>
<td><a href="mailto:jllindler@yahoo.com">jllindler@yahoo.com</a></td>
<td>704-689-3880</td>
</tr>
<tr>
<td>Webmaster</td>
<td>Jacob Lindler</td>
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<td>704-689-3880</td>
</tr>
<tr>
<td>Historian</td>
<td>David Hine</td>
<td><a href="mailto:dhine@fujifilm.com">dhine@fujifilm.com</a></td>
<td>864-993-8235</td>
</tr>
<tr>
<td>Former Chair</td>
<td>Rick Vogel</td>
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<td>864-420-5777</td>
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<tr>
<td>ECM*</td>
<td>Don Gurney</td>
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<td>864-879-7935</td>
</tr>
<tr>
<td>ECM*</td>
<td>Karl McCaleb</td>
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<td>843-858-1182</td>
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Clemson Scholarship Support to Continue

The Executive Committee has again agreed to support a single student enrolled in Clemson’s Chemical and Biomolecular Engineering program with a $1,000 scholarship. The application is attached to this newsletter.
WESTERN SOUTH CAROLINA AIChE SECTION SCHOLARSHIP

The Western South Carolina Section of the American Institute of Chemical Engineers is pleased to support the Chemical and Biomolecular Engineering program at Clemson University by offering a $1,000 scholarship. This scholarship is to be awarded to a returning Chemical and Biomolecular Engineering student with a projected graduation date between August 2015 and May 2016.

The $1,000 award will be presented at the joint meeting between the Clemson Student Chapter and the Western South Carolina AIChE Section on February 10, 2015.

Applications are available at http://wsc.aiche.org. Completed applications are due to the Western South Carolina AIChE Section Secretary at sec@wscaiche.org by noon on January 18, 2015, in PDF or Word format. The Secretary will email reply receipt of application.

Name of Student: ________________________________

Student email address: ___________________________ Phone: ___________________

Student ID # ________________ AIChE Student Chapter Member? Yes _____ No _____

Expected Graduation Date: __________________________

<table>
<thead>
<tr>
<th>Chemical Engineering Courses Completed</th>
<th>Semester Course was completed</th>
<th>Credits</th>
<th>Grade</th>
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Calculate the average of only the courses listed above to determine your chemical engineering GPA: __________

List extracurricular activities and describe special duties (e.g., offices held, etc.)

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

Attach two written essays (250 words maximum per essay, typed):

1) Describe your career goals as a chemical engineer.

2) Describe (in words that a freshman engineering student could understand) what a practicing chemical engineer does.