

Special Report on Cellulosic Ethanol: SEKAB assembles Euro-based research consortium for five-carbon sugar (pentose) ethanol

In Sweden, SEKAB has been assembling a research and production consortium based on fermentation of both five-carbon and six-carbon sugars. researchers at Taurus Energy, Chalmers Technical University and the University of Lund have joined an R&D consortium.

The president of Taurus Energy said that the group hoped to become the first to demonstrate a commercially viable [...]

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The Hottest 50 Companies in Bioenergy

The Hottest 50 Companies in Bioenergy, as ranked by Biofuels Digest for 2008-09 are:

1. Coskata
2. Sapphire Energy
3. Virent Energy Systems
4. POET
5. Range Fuels
6. Solazyme
7. Amyris Biotechnologies
8. Mascoma

<http://biofuelsdigest.com/blog2/?s=taurus&x=16&y=11>

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9. DuPont Danisco
10. UOP
11. ZeaChem
12. Aquaflow Bionomic
13. Bluefire Ethanol
14. Novozymes
15. Qteros
16. Petrobras
17. Cobalt Biofuels
18. Iogen
19. Synthetic Genomics
20. Abengoa Energy
21. KL Energy
22. INEOS
23. GreenFuel
24. Vital Renewable Energy
25. LS9
26. Raven Biofuels
27. [...]

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Sweden's SEKAB, Taurus Energy, others form cellulosic fuels R&D partnership for five-carbon sugars

In Sweden, researchers at Taurus Energy, SEKAB, Chalmers Technical University and the University of Lund announced an R&D agreement for the development of cellulosic fuels. The agreement is based on the Taurus yeast process for fermentation of six- and five-carbon sugars. The president of Taurus Energy said that the group hoped to become the first [...]

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26. Raven Biofuels
27. Gevo
28. St.1 Biofuels Oy
29. Primafuel
30. Taurus Energy

31. Ceres
32. Syngenta
33. Aurora Biofuels
34. Bionavitas
35. Algenol

36. Verenum
37. Simply Green
38. Carbon Green
39. SEKAB
40. Osage Bioenergy

41. Dynamotive
42. Sustainable Power
43. ETH Bioenergia
44. Choren
45. Origin Oil

46. Propel Fuels
47. GEM Biofuels
48. Lake Erie Biofuels

Behind the 50 Hottest Companies in Bioenergy rankings

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Here are some notes on the selections for the Hottest 50 Companies in Bioenergy.

The qualifying criteria was making at least one appearance in the Digest over the past 12 months, or a nomination from the readership. About 500 companies qualified via the first route, from the 3,000 stories published this year, and about 20 additional companies were nominated by readers.

The most important measure was the quality of the intellectual property owned or developed by the company. The more unique, the more compelling, and more talked-about, the better. Companies that hid their IP in the cellar (nothing wrong with that - Coke has done it for years), had a tougher time getting into the rankings or getting a high position.

The second most important measure was the due diligence done on the company by public and private investors. A dollar invested in a company is a powerful form of voting one's belief in the business model, the management, and the IP. Especially if those dollars are personal dollars. So investments by VC - especially those who are known to do very good due diligence, were valued highly. Corporate dollars too, although they don;t always represent a personal investment. Even public dollars are of immense value - all the four original recipients of DOE dollars for cellulosic demonstration-scale plants (well, originally there were six, but two dropped out) are highly ranked this year.

The third measure was measurable progress towards commercialization - although companies are at different stages in their evolution. Early-stage companies were measured against typical early-stage milestones, while later-stage companies had more overtly commercial benchmarks such as revenues and growth rates.



<http://biofuelsdigest.com/blog2/2008/12/22/behind-the-50-hottest-companies-in-bioe...> 2009-01-26

Some note on companies.

For **Coskata**, the march towards the first 100 Mgy cellulosic ethanol plant was a key factor. The \$1 per gallon target for fuel production is a "hot" target for sure. Investments by GM and Khosla Ventures are a factor. Vinod's group has thought through the space very intelligently, and GM doesn't have cash to burn on foolish exercises, so their investment speaks some volumes.

For **Sapphire**, the Continental Airlines test was a major factor, especially in the algae space where it is sometimes hard to find actual producers of material amounts of fuel. The Cascadia Investments and Venrock participation in the company were also key. Cascadia has been burned in the biofuels space before, with their investment in Pacific Ethanol. SO coming back in for a second dip says a lot.

For **Virent**, a "hot" technology that produces a "green gasoline" that is a drop-in replacement for current fuels is a compelling set of IP. The World Economic Forum's Technology Pioneer Award to Virent this year was a factor.

POET is a first-generation biofuels company that think like a next-gen company. A pilot scale cellulosic plant ready to go. A demonstration scale project in the build process. A unique corn processing technology that gets a higher yield than competitors. Not to mention that POET is out in front on lobbying and consumer education.

Range Fuels is likely to complete the first demonstration-scale cellulosic ethanol plant, larger in capacity than KL Energy's current plant and thereby for a while the largest active plant in the world. That's reason to pay attention right there. Add in a unique gasification technology that uses wood waste from the forest-rich US Southeast.

Solazyme has been getting it done all year. A unique fermentation approach to algae production - growing algae in the dark and feeding it sugar. That's a compelling idea - and steps around problems of scale that have been experienced with photo bioreactors. Add in real progress towards making and distributing fuel - they have their own brand and provided fuel for a demo algae car at Sundance when "FUEL, the film" was making its celebrated debut.

Amyris is another company with a drop-in fuel solution - that's compelling. But also, a remarkable bug-based approach that uses sugar cane as a feedstock. The company produces a renewable diesel, and thereby targets a market that is holding up much better on price than the gasoline or ethanol markets.

UOP has been making algae biodiesel for most of the airline tests that are using it, as well as jatropha biodiesel. A company that is wired in with fuel customers and can make fuels seamlessly from a variety of hot feedstocks is hot itself, indeed.

Mascoma has been making terrific progress towards cellulosic ethanol with a small-scale plant in development in upstate New York. They pulled out of the Tennessee biofuels project because they had outgrown the scope of the heavily-subsidized project. That's a sign of real confidence.

DuPont Danisco slipped into Mascoma's position with the University of Tennessee project, and is well advanced in its plans for cellulosic ethanol. A combination of two giants compels attention, for sure.

Overall, the top ten has the right combination of IP, allies, dollars and progress that set them apart not only from the other 40 distinguished honorees, but also from the 1,000+ companies who did not make the rankings this time around.

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