

30 Most Transformative Technologies of 2010

JIM LANE, Biofuels Digest



In Florida, Biofuels Digest announced the winners of its “30 Most Transformative Technologies of 2010?” poll. The publication’s readers submitted more than 48,000 votes from 3,500 ballots during the three-week voting process.

The readers chose between transformative bioenergy technologies at more than 250 companies, universities and national laboratories, including 100 organizations that received write-in votes.

The 2010 Transformative Technology 30

(Please follow the link below for more data on each organization’s technologies)

- **Algenol** ([MicroAlgae, cyanobacteria, lemna, and plankton platforms \[1\]](#))
- **Amyris Biotechnologies** ([Microbial fuels \[2\]](#))
- **BioEnergy International** ([Renewable chemicals \[3\]](#))
- **Butamax** ([Biobutanol technologies \[4\]](#))
- **Ceres** ([Advanced feedstock technologie \[5\]s](#))
- **ClearFuels-Rentech** ([Fischer-Tropsch technologies \[6\]](#))
- **Cobalt Technologies** ([Biobutanol technologies \[4\]](#))
- **Coskata** ([Cellulosic ethanol \[7\]](#))
- **DuPont - BioArchitecture Lab** ([Seaweed - Macroalgae technologie \[8\]s](#))

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- **Dupont Danisco Cellulosic Ethanol** ([Cellulosic ethanol](#) [7])
- **Energy Allied International, The Seawater Foundation and Global Seawater** ([Salt-tolerant feedstocks](#) [3])
- **Ford Motor Company - Bobcat** project ([Engine technologies](#) [9])
- **Genencor** ([Enzyme technologies and platforms](#) [10])
- **Gevo** ([Biobutanol technologies](#) [4])
- **Green Biologics** ([Biobutanol technologies](#) [4])
- **Joule Unlimited** ([Microbial fuels](#) [2])
- **KL Energy** ([Small scale systems and microfuelers](#) [11])
- **LS9** ([Microbial fuels](#) [2])
- **Mascoma** ([Cellulosic ethanol/Consolidated Bioprocessing](#) [12])
- **Masdar Institute of Science and Technology, Boeing, Etihad Airways and UOP Honeywell** ([Salt-tolerant feedstocks](#) [3])
- **Novozymes** ([Enzyme technologies and platforms](#) [10])
- **OriginOil** ([MicroAlgae, cyanobacteria, lemna, and plankton platforms](#) [1])
- **PetroAlgae** ([MicroAlgae, cyanobacteria, lemna, and plankton platforms](#) [1])
- **POET** ([Cellulosic ethanol](#) [7])
- **Qteros** ([Cellulosic ethanol/Consolidated Bioprocessing](#) [12])
- **Sapphire Energy** ([MicroAlgae, cyanobacteria, lemna, and plankton platforms](#) [1])
- **SBI Bioenergy** ([Biodiesel systems](#) [13])
- **SES - Seaweed Energy Solutions** ([Seaweed - Macroalgae technologies](#) [8])
- **Solazyme** ([MicroAlgae, cyanobacteria, lemna, and plankton platforms](#) [1])
- **Verenium** ([Cellulosic ethanol](#) [7])

Overall, the 30 selected organizations represented 14 of the 18 total categories in

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the poll. Among categories that did not produce a winner, the Massachusetts Institute of Technology's butanol-based project led in the Electrofuels category, Iowa State led in the Pyrolysis category, the Solana/British Airways project led in the waste-to-energy category, and UOP led in the Chemical reforming and hydroprocessing category.

Close competition between numerous competing technologies within a category in many cases prevented outstanding companies from reaching the Top 30 - notably, fierce competition in the waste-to-energy, pyrolysis and enzyme technology categories. Support for organizations developing microalgae-based technologies was particularly strong with 17.83 percent of readers selecting the category as a whole.

One technology, the FORD Bobcat project which developed an ethanol-injection technology capable of increasing fuel economy through use of ethanol (compared to a drop of up to 25 percent, using ethanol in standard engines), was discontinued by its developers.

Overall, six of the recipients represented consortia or joint ventures.

21 of the 30 organizations recognized in the Transformative Technologies poll also were recognized in the "50 Hottest Companies in Bioenergy" for 2009-10.

The leading categories, as recognized by the readers, were:

MicroAlgae, cyanobacteria, lemna, and plankton platforms - 17.83%

Waste to energy and symbiotic systems - 9.46%

Seaweed - Macroalgae technologies - 8.63%

Biodiesel systems - 8.59%

Cellulosic ethanol - 7.83%

Biobutanol technologies - 6.47%

Microbial fuels - 5.64%

Renewable chemicals - 4.81%

Enzyme technologies and platforms - 4.09%

Cellulosic ethanol/Consolidated Bioprocessing - 3.67%

Pyrolysis - 3.60%

Advanced feedstock technologies - 3.48%

Salt-tolerant feedstocks - 3.41%

Small scale systems and microfuelers - 3.03%

Engine technologies - 2.99%

Chemical re-forming and hydroprocessing technologies - 2.20%

Electrofuels - 2.16%

Fischer-Tropsch technologies - 2.12%

Organizations that missed out on the top 30, but ranked in the overall Top 50

(Please follow the link below for more data on each organization's technologies)

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- **Algaeventure Systems** ([MicroAlgae, cyanobacteria, lemna, and plankton platforms \[1\]](#))
- **Aurora Biofuels** ([MicroAlgae, cyanobacteria, lemna, and plankton platforms \[1\]](#))
- **Bluefire Ethanol** ([Cellulosic ethanol \[7\]](#))
- **British Airways/Solana** ([Waste to energy and symbiotic systems \[14\]](#))
- **Codexis** ([Enzyme technologies and platforms \[10\]](#))
- **eMicrofueller** ([Small scale systems and microfuelers \[11\]](#))
- **Enerkem** ([Waste to energy and symbiotic systems \[14\]](#))
- **logen** ([Cellulosic ethanol \[15\]](#))
- **Lawrence Berkeley National Laboratory** ([Electrofuels \[16\]](#))
- **Louisiana Tech enzyme project** ([Enzyme technologies and platforms \[10\]](#))
- **Massachusetts Institute of Technology** ([Electrofuels - biodiesel and butanol projects \[16\]](#))
- **Mcgyan process** ([Biodiesel systems \[13\]](#))
- **National Alliance for Advanced Biofuels and Bioproducts** ([MicroAlgae, cyanobacteria, lemna, and plankton platforms \[1\]](#))
- **SynGest** ([Renewable chemicals \[3\]](#))
- **Synthetic Genomics** ([Advanced feedstock technologies \[5\]](#))
- **University of Cincinnati** ([Microbial fuels \[2\]](#))
- **UOP** ([Chemical re-forming and hydroprocessing technologies \[17\]](#))
- **Virent Energy Systems** ([Chemical re-forming and hydroprocessing technologies \[17\]](#))
- **W2Energy** ([Waste to energy and symbiotic systems \[14\]](#))
- **ZeaChem** ([Cellulosic ethanol \[7\]](#))

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Links:

- [1] <http://biofuelsdigest.com/bdigest/2010/06/07/transformative-technologies-2010-nominees-microalgae-cyanobacteria-lemna-and-plankton/>
- [2] <http://biofuelsdigest.com/bdigest/2010/06/07/transformative-technologies-2010-nominees-direct-microbial-conversion-to-fuel/>
- [3] <http://biofuelsdigest.com/bdigest/2010/06/07/transformative-technologies-2010-nominees-renewable-chemicals-and-fertilizers/>
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- [17] <http://biofuelsdigest.com/bdigest/2010/06/07/transformative-technologies-2010-nominees-chemical-reforming-technologies-and-hydrotreating/>