

PHOTANOL

Photanol is a biotechnology company that developed a breakthrough technology to convert CO₂ into valuable organic compounds. In the long term, the company hopes to provide a cost-effective alternative production from bulk chemicals and fuels.

WEBSITE: www.photanol.com

Cyanobacteria are thought to be largely responsible for making Earth habitable for life as we know it. Could these primordial organisms be the key to reversing climate change?

Yes, through their oxygenic photosynthesis, these organisms not only were able to provide the primordial earth with an oxygen-rich atmosphere, but, because their genetic makeup is easy to adjust, they can also be modified to synthesize, directly from CO₂ and with the energy derived from sunlight, almost any carbon-containing product that is nowadays derived from fossil carbon. Accordingly, they can be instrumental in reversing climate change.

When can consumers expect Photanol products to be ready for mass consumption?

For more than twenty-five different products, proof of principle of

the feasibility of using the “direct conversion” approach of converting CO₂, water, and sunlight into a preferred product has already been provided, in various patents and in the scientific literature. Depending on the particular product and the scale of the corresponding production, this may take between two and five years. Currently, the commercial production of bioethanol is the furthest advanced. Additionally, various opportunities for increasing the overall operating efficiency have so far remained unexplored.

If you were to testify at the United Nations Conference on Climate Change, what message would you give to the world's most influential decision makers?

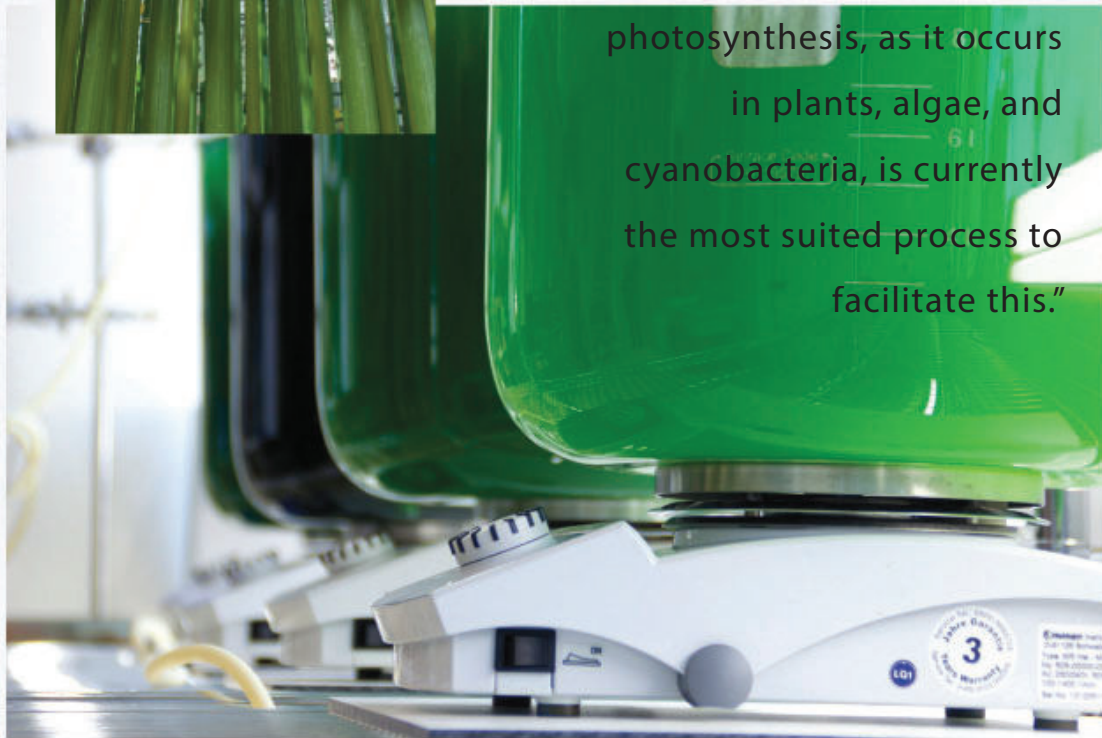
Closing the global carbon cycle is of utmost importance for a

sustainable future. Hence, there is an urgent need to replace fossil carbon with renewable carbon in products ranging from liquid energy carriers to chemical commodities, in a process driven by sunlight. Natural oxygenic photosynthesis, as it occurs in plants, algae, and cyanobacteria, is currently the most

suited process to facilitate this. For a host of reasons (e.g., efficiency, no mineral depletion, low water requirement, no competition with food or feed production), cyanobacteria are the preferred organisms to realize this gross redirection of the gross carbon flow on earth.



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Response provided by Klaas J. Hellingwerf who received his Ph.D. in Biochemistry from the University of Amsterdam in 1979, after which he served as full professor in General microbiology at the same university from 1988 to 2015. In this function he developed the idea of sustainability applications with cyanobacteria on which Photanol BV is founded.