

Working on artificial leaves with BioSolar Cells

A solar cell that produces biofuel

Solar cells with extras

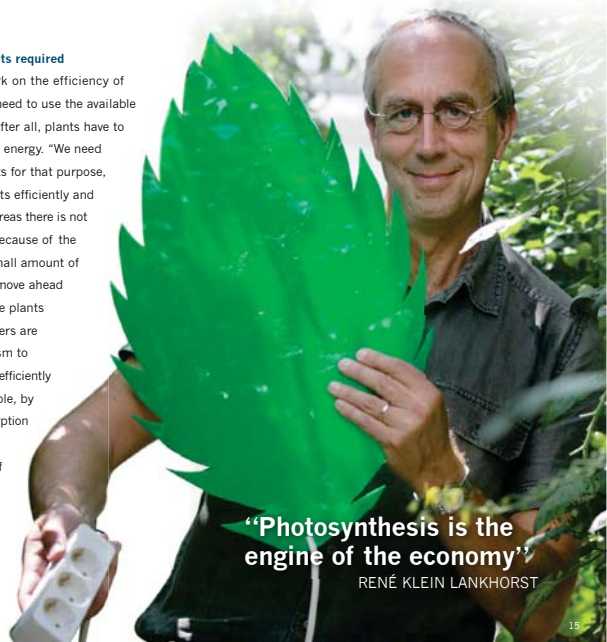
Could it be that one day everyone will have solar panels on the roof that produce enough fuel to fill up your car tank? It is not inconceivable. Wageningen UR is conducting research into BioSolar Cells as an alternative to the existing solar panels for that purpose. The special aspect of BioSolar Cells is that – unlike existing photovoltaic cells – they are able to directly produce liquid fuels. Researchers are effectively working on an artificial leaf!

Contribution of the Netherlands' best physicists

BioSolar Cells are based on photosynthesis, the unique process that makes it possible for plants to convert light into organic compounds. Wageningen UR, one of the initiators of the BioSolar Cells research, is studying ways of enhancing photosynthesis in such a way that this natural process can be used for sustainable energy supplies. "We are enhancing the efficiency of photosynthesis in this research programme. Photosynthesis is a plant's engine. If you want to drive faster, you have to improve photosynthesis", explains René Klein Lankhorst.

Highly productive plants required

Another reason to work on the efficiency of photosynthesis is the need to use the available soil more intensively. After all, plants have to provide food as well as energy. "We need highly productive plants for that purpose, plants that use nutrients efficiently and grow quickly. In many areas there is not enough plant growth because of the lack of water or the small amount of fertiliser provided. To move ahead we need to enhance the plants themselves." Researchers are working on a mechanism to have plants work more efficiently with the sun, for example, by reducing the light absorption level per leaf layer and changing the position of the leaves.



"Photosynthesis is the engine of the economy"

RENÉ KLEIN LANKHORST