Brightsite

Transforming industry

Brightsite Plasmalab recognises the potential of syngas and offers an attractive way to produce it

Syngas has huge potential to help make the chemicals industry more sustainable. This mixture of hydrogen and carbon monoxide has also piqued the interest of the Brightsite Plasmalab, which opened in November 2021. "The transition to a more sustainable chemical industry requires more than just recycling plastics — methane, hydrogen, carbon dioxide and biomass are also logical candidates for use in the production of all kinds of products. Plasma technology can help to make this a reality in a number of ways, in particular through the production of syngas", reports Gerard van Rooij, Professor of Plasma Chemistry at Maastricht University.

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Sitech Services
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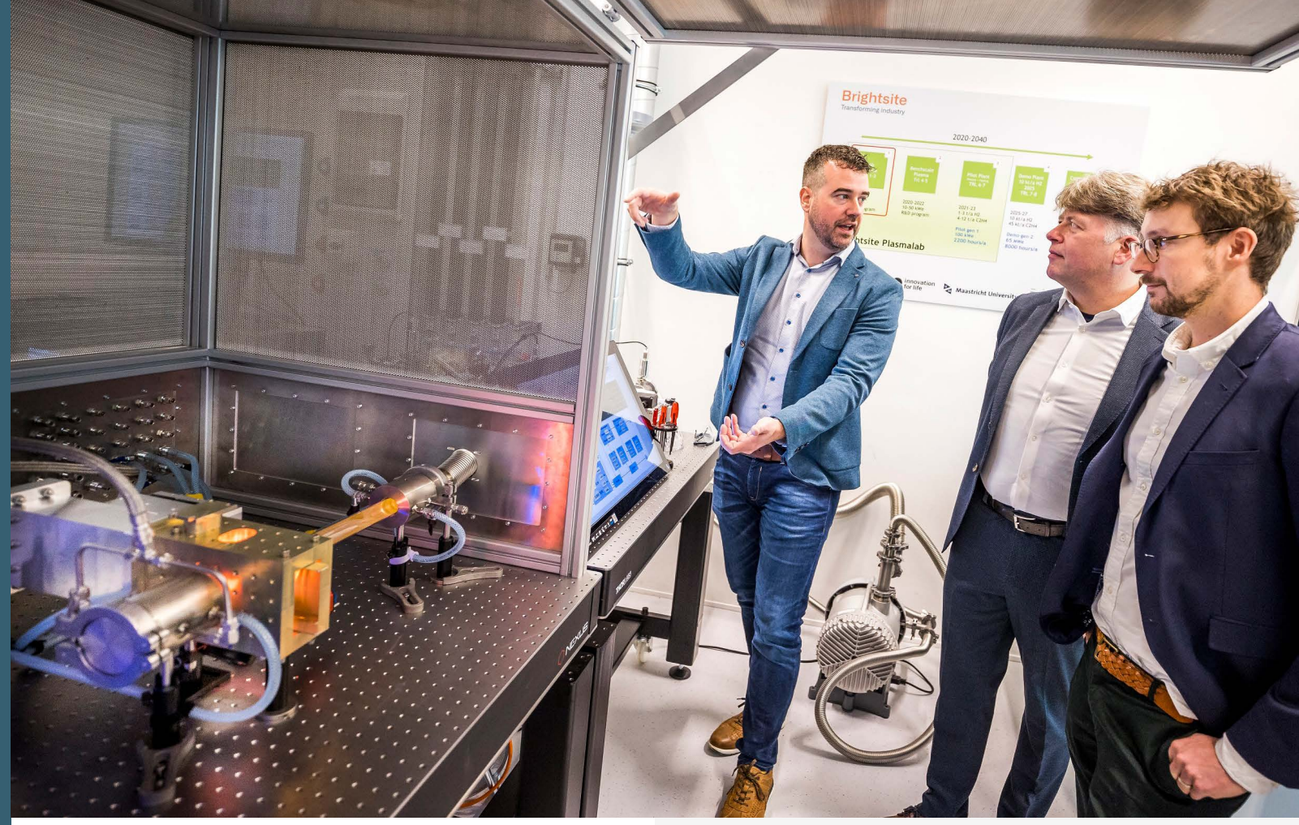
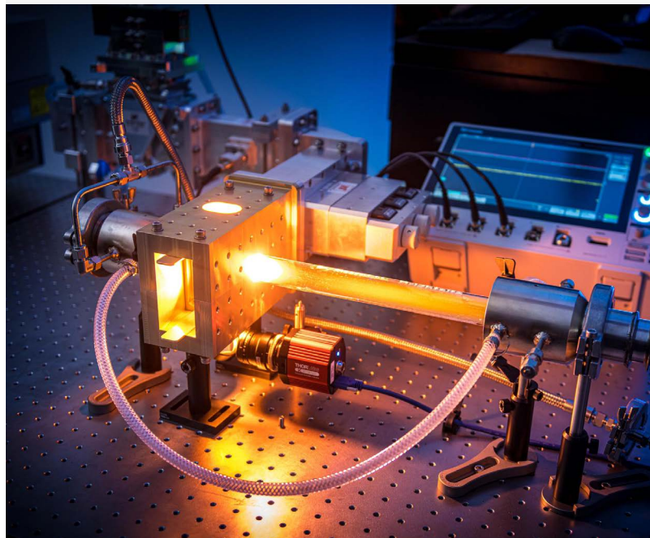


A significant reduction in carbon dioxide (CO_2) emissions is absolutely essential in order to meet climate change targets. Plasma technology uses an electric flame to heat molecules to a high temperature, allowing them to be split and combined as desired. This technique can be used to convert CO_2 into carbon monoxide (CO) and oxygen (O_2). "Alex van de Steeg, who I supervised and who recently graduated cum laude, has shown that CO_2 can be recycled efficiently using plasma technology. Converting that CO into usable products requires syngas — a mixture of CO and hydrogen (H_2). This is something we will be researching at the Brightsite Plasmalab. We are considering a number of options, including combining CO_2 with methane (CH_4), which can ultimately be converted into syngas", explains Van Rooij. Van Rooij and his colleagues have already been working with DIFFER to carry out research into syngas, which they would like to continue at the Brightsite Plasmalab in the near future. "Syngas has huge potential and plasma technology offers an attractive method for producing it. We are looking for partners to help us launch further research into syngas", Van Rooij is keen to note. Read more about it in the article 'Learning from the past: the sustainable future of syngas'.

Gerard van Rooij, Professor of Plasma Chemistry at Maastricht University:

"Syngas has potential and plasma technology is an attractive way to make it. We are looking for partners to set up syngas research."



About the Brightsite Plasma Lab

The Brightsite Plasma Lab is the place where Brightsite partners UM, TNO and Sitech Services, together with students and companies on the Brightlands Chemelot Campus, will optimize existing plasma technology and develop new plasma processes.

Plasma technology has the potential to electrify chemical processes with (green) electricity and produce hydrogen and raw materials for the chemical industry without releasing CO_2. With the establishment of the Brightsite Plasma Lab in 2021, a major step was taken towards new industrial applications of plasma technology within the chemical industry, in an efficient and sustainable way.

"We are one of the few who can really look into the 'black box' of plasma, only a few other labs can do that. What makes it really special is that we combine this with experiments under high pressure and power on a larger scale. Our goal is to work towards applying plasma technology on an industrial scale," says Van Rooij.

Does your company recognize itself in the working method of Brightsite?

The future perspective is that by 2050 the majority of processes and installations in the chemical industry will be powered by renewable electricity. Brightsite stands for the development and scaling up of these technologies and the conversion of expertise into a revenue model. Do you want to contribute to this program? Or do you want to make use of this services?

Please contact us.

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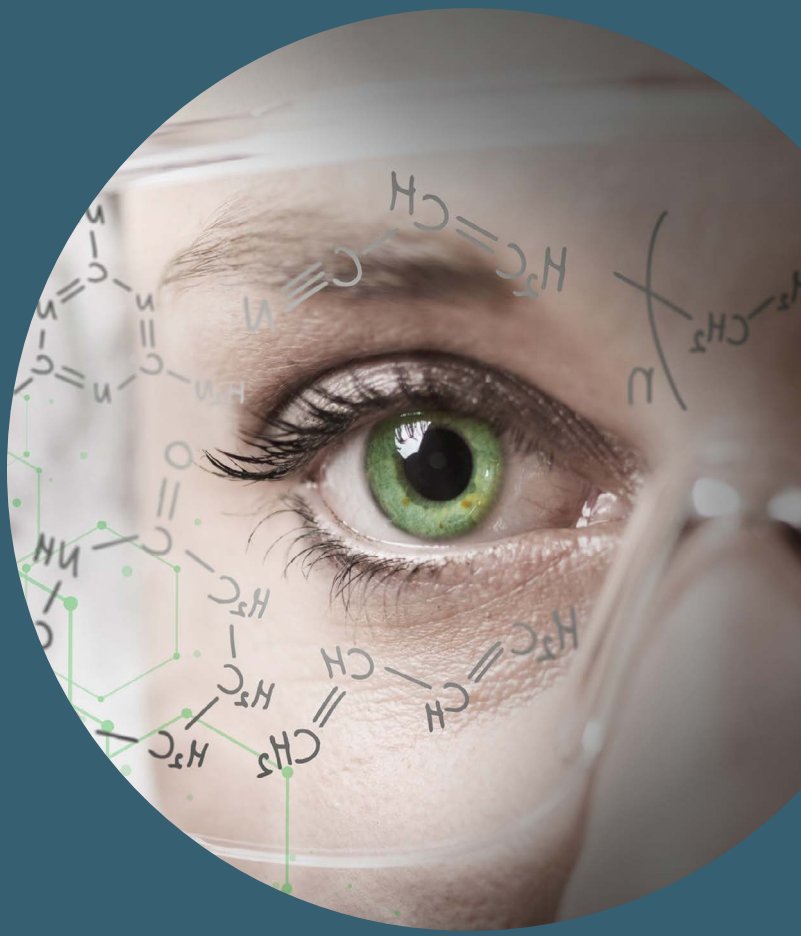

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