

# Symposium Solar to Products

## Essential building blocks for a carbon neutral future

6 November 2019, DIFFER, De Zaaie 20, 5612 AZ Eindhoven

Welcome			
09:30	Welcome and registration		30'
09:55	Opening of the symposium	Stephan van Duren (NWO)	
Creating sustainable CO <sub>2</sub> -neutral fuels (CNF)			
	Past NWO program CO <sub>2</sub> -neutral fuels		60'
10:00	Highlights CNF program	Richard van de Sanden (DIFFER)	
10:20	Catalytic and electrochemical processes for energy applications	Mihalis Tsampas (DIFFER)	
10:40	Electrochemical materials and interfaces	Anja Bieberle (DIFFER)	
11:00	Break		15'
Storing and converting solar energy in chemical products			
	Present NWO program Solar-to-Products 1/2		60'
		Industry partners	Science partners
11:15	Photo thermocatalytic conversion of CO <sub>2</sub> and H <sub>2</sub> O to methanol	Guido Mul (UT)	Syngaschem B.V.
11:30	CO <sub>2</sub> valorisation in biogas by solar driven plasma reforming	Gerard van Rooij (TU/e)	SHELL
11:45	An integrated device to directly convert sunlight, water, and CO <sub>2</sub> to syngas using only earth abundant materials (DISCO)	Arno Smets (TUD)	SHELL
		Everest Coatings SME	Delft Tech University Leiden University
12:00	Redox mediators in dye-sensitized photoelectrochemical cells for CO <sub>2</sub> reduction	Didjay Bruggeman (UvA)	Merck KGaA
			University of Amsterdam
12:15	Poster session (with lunch break)		90'
Storing and converting solar energy in chemical products			
	Present NWO program Solar-to-Products 2/2		60'
		Industry partners	Science partners
13:45	Darwin's path towards sustainability: exploring evolutionarily stable strategies in engineered biosolar cell factories	Filipe Branco dos Santos (UvA)	Photanol B.V.
			University of Amsterdam
14:00	Vibrationally stimulated electro-fuel production in a proton conducting solid oxide electrolysis cell" ("VISEP")	Stefan Welzel (DIFFER)	SHELL
			DIFFER Twente University
14:15	Design and optimization of a photoanode for solar fuel production	Francesco Buda (UL)	Scientific Computing & Modelling N.V.
			Leiden University Free University
14:30	Electrochemical reduction of CO <sub>2</sub> to ethylene	Petra de Jongh (UU)	SHELL
			TNO Twente University Leiden University Utrecht University
14:45	Break		15'
Panel Discussion - Triple Helix			
	Industry (supplier&user) / Government / Science		60'
15:00	Panel discussion with representatives from the triple helix How can we accelerate implementation of new technologies? What opportunities are ahead for industry? How can we bridge the gap between science and industry? What role can the government play? How to keep the general public involved in long term goals? How can we find a balance between short and long term goals?	Nicollé Lambrechts (Province Noord Brabant) Gert-Jan Gruter (Avantium) Ton Wurth (Siemens) Ton Peijnenburg (VDL-ETG) André Faaij (University of Groningen / ECN)	
		Panel Chair: Christa Hooijer (TNO)	
16:00	Break		15'
Future - national and international activities / funding			
			75'
16:15	Future EU research program	Huib de Groot (UL)	
16:45	Dutch climate agreement: electrification and radical new processes	Andreas ten Cate (ISPT)	
17:00	Funding opportunities public-private collaboration	Marcel Hoek (NWO)	
17:15	Responsible innovation	Rietje van Dam (TKI BBE / MVI) Marlies van de Meent (NWO / MVI)	
17:25	Closing	Stephan van Duren (NWO)	
17:30	Networking with drinks		60'
18:30	End of Solar-to-Products symposium		