

## **KEROGREEN organised "Winter school"** in collaboration with E-Fuel, BECCU and EERA JP Energy Storage







# Future directions in research on Power-to-X for sustainable chemicals & fuels

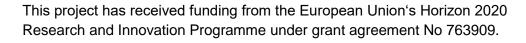
# 10-11 February 2022

#### **Online event Zoom**

Chair: Prof. Roland Dittmeyer, Karlsruhe Institute of Technology, DE

#### Thursday 10th February 2022

9:00 – 9:10	Opening Winter school and Welcome (R. Dittmeyer)
	Chair morning session: Juha Lehtonen, VTT
9:10 – 9:35	EU Project KEROGREEN: Main Challenges and first results Adelbert Goede, DIFFER (NL)
9:35 – 10:00	Plenary presentation of E-Fuel and BECCU Projects Juha Lehtonen, VTT (FI)
10:00 – 10:25	Status of modular plants for decentralised Power-to-X Michael Rubin (Klumpp), KIT (DE)
10:25 – 10:45	Coffee break
10:45 – 12:05	<ul> <li>Oral presentations</li> <li>Vanesa Gil, Aragon Hydrogen Foundation: Air Carbon Recycling for Aviation Fuel Technology</li> <li>Jan-Willem Könemann, TNO: Take-Off a novel process to synthetic aviation fuel</li> <li>Christian Frilund, VTT: CO₂ conversion to hydrocarbons using reverse water gas shift and FT-synthesis</li> <li>Esperanza Ruiz, CIEMAT: Process intensification for advancing Power-to-Fuel</li> </ul>
12:05 – 13:05	Lunch break
	Chair afternoon session: Francisco Vidal Vázquez, KIT
13:05 – 14:05	<ul> <li>Oral presentations</li> <li>Mihalis Tsampas, DIFFER: Synergistic combination of plasma and electrocatalysis for nitrogen fixation by water</li> <li>Stefan Welzel, DIFFER: CO<sub>2</sub> plasmolysis in the KEROGREEN process chain: Development of a plasma reactor module for CO production</li> <li>Marijke Jacobs, VITO: Development of thin electrode layers by spray coating for solid oxide cells</li> </ul>







### Towards sustainable and green aviation fuel production

14:05 – 14:25	Coffee break
14:25 – 15:45	<ul> <li>Oral presentations</li> <li>Marjut Suomalainen, VTT: Techno-economic assessment of producing diesel from CO<sub>2</sub> and H<sub>2</sub>O via co-electrolysis and Fischer-Tropsch synthesis</li> <li>Vafa Järnefelt, VTT: The potential of CCU technologies in mitigating climate change</li> <li>Miia Nevander, VTT: Techno-economics of the synthesis route from CO<sub>2</sub> and clean H<sub>2</sub> to polycarbonate polyols</li> <li>Joachim Falkenhagen, Windland Energieerzeugungs GmbH: Green Future Quota" for power-to-X fuels like green hydrogen and kerosene</li> </ul>
16:00	End of 1 <sup>st</sup> day





### Towards sustainable and green aviation fuel production

#### Friday 11th February 2022

	Friday 11 <sup>th</sup> February 2022
9:00	Start 2 <sup>nd</sup> day
	Chair morning session: Roland Dittmeyer, KIT
9:00 – 9:30	Invited plenary presentation: The role of hydrogen and hydrogen-derived fuels in the IEA Net Zero Emissions 2050 roadmap Ilkka Hannula, IEA (FR)
9:30 – 10:50	<ul> <li>Oral presentations</li> <li>Emil Drazevic, Arhus University: Decentralized production of green and sustainable ammonia – insights from EU/Japan collaboration</li> <li>Onni Linjala, VTT: CO<sub>2</sub> supply options for P2X and results from carbon capture experiments</li> <li>Sari Rautiainen, VTT: Fossil-free polycarbonate polyols from captured carbon dioxide and renewable hydrogen</li> <li>Dorela Dhamo, KIT: Defossilizing the aviation sector with synthetic fuels (poster)</li> </ul>
10:50 – 11:10	Coffee break
11:10 – 12:30	<ul> <li>Oral presentations</li> <li>Peter Holtappels, DTU: Organic Electrosynthesis: a sustainable route to polymers and other high value chemicals?</li> <li>Mikko Lappalainen, VTT: State-of-the-art and future mapping of electrolyser technologies</li> <li>Ville Saarinen, VTT: High temperature electrolysis and co-electrolysis for production of green hydrogen and syngas</li> <li>Mery Hernandez, KIT: Plasma assisted H<sub>2</sub>O<sub>2</sub> synthesis from water and oxygen</li> </ul>
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