H2020 SUN-to-LIQUID
Demonstration Event
of the
Solar Thermochemical Research Facility

- ⭘ Date and time   June 13ᵗʰ, 2019, 11:30 – 17:30
- ⭘ Venue and host: IMDEA Energy Institute

                                Avenida Ramón de la Sagra, 3.

                                28935 Móstoles, Madrid, Spain

The SUN-to-LIQUID project established a unique research plant to demonstrate the thermochemical synthesis of transportation fuels from water, carbon dioxide and high-flux solar radiation. It's our pleasure to invite you to the SUN-to-LIQUID Demonstration Event at the solar fuel facility in Móstoles (Spain).

Project partners will proudly present the experimental facility and show the significance of SUN-to-LIQUID research and innovation for policy, science and the industry. A panel discussion with key stakeholders to highlight the progress and perspectives of solar fuels will follow.

- ⭘ **IMPORTANT NOTE:** Please bring your valid identification proof for the security check to the venue.
- ⭘ For more information about the project, visit SUN-to-LIQUID webpage.
- ⭘ For additional information, email us at s2l-sw@eurtd.com or write at the contact form.

Agenda

Start –End time	Agenda	Speaker
11:30 -12:00	*Welcome coffee at IMDEA Energy and registration*	
12:00-12:40	**Session 1: Welcome, scene setting and SUN-to-LIQUID overview**	
12:00-12:05	Welcome to IMDEA Energy and SUN-to-LIQUID Demonstration	M. Romero, IMDEA Energy
12:05-12:10	Project Introduction and Demonstration event objective	A. Sizmann, Bauhaus Luftfahrt
12:10-12:15	SUN-to-LIQUID project video	
12:15-12:25	Spanish National Integrated Plan for Energy and Climate 2030	V. Marcos, Ministry for the Ecological Transition
12:25-12:40	European perspectives on renewable fuels	Maria Georgiadou, European Commission, DG Research & Innovation
12:40-13:20	**Session 2: SUN-to-LIQUID overview**	
12:40-13:00	SUN-to-LIQUID Solar thermochemical conversion technology	A. Steinfeld, ETH Zurich
13:00-13:20	SUN-to-LIQUID Solar thermochemical plant	M. Romero, IMDEA Energy
13:20 –14:20	*Buffet lunch*	
14:20- 15:50	**Demonstration of the SUN-to-LIQUID plant with coffee**	All
15:50- 17:20	**Final panel on progress and perspectives (90 min)**	A.Sizmann (Moderator), Bauhaus Luftfahrt
15:50-16:00	Presentation: Renewable gas production & distribution (10 min)	John Chamberlain, Naturgy Energy Group
16:00-16:10	Presentation: Future perspectives of solar fuels (10 min)	Gianluca Ambrosetti, Synhelion
16:10-16:20	Presentation: Solar fuels in a circular economy (10 min)	Martin Roeb, DLR
16:20-16:30	Presentation: Future development CSP and synergies with solar fuel production (10 min)	Luis Crespo, ProtermoSolar
16:30-17:20	Panel discussion (50 min)	Maria Georgiadou, John Chamberlain, Gianluca Ambrosetti, Martin Roeb, Luis Crespo
17:20- 17:30	Wrap up of Demonstration Event	M. Romero, IMDEA Energy
17:30 -19:00	*Networking reception cocktail and End of Demo Event*	

Event highlights

Event highlights include informative talks, interactive activities and networking opportunities.

○ Informative talks
  - ○ Presentation of the project achievements
  - ○ Presentations by renowned speakers from industry, research and government and European Commission

○ Interactive activities
  - ○ visit to the solar-thermochemical fuel facility
  - ○ panel discussion key stakeholders to highlight the progress and perspectives of solar fuels
  - ○ networking reception

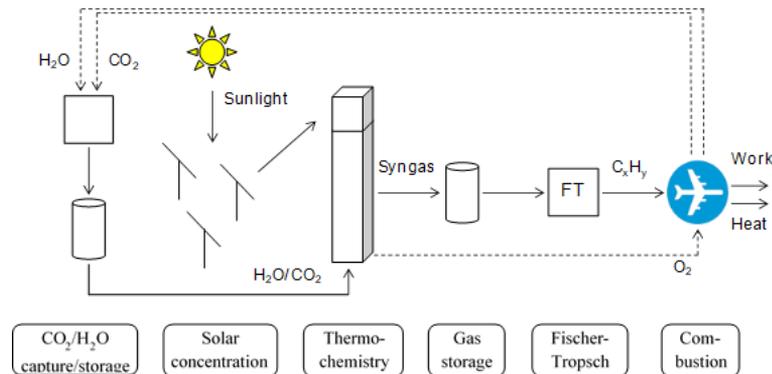Technical sessions will take place at the Auditorium of the Institute IMDEA Energy

Visit to the SUN-to-LIQUID solar-thermochemical fuel facility

The primary objective of the SUN-to-LIQUID project is the scale-up, field demonstration and pre-commercial validation of the complete process chain to solar hydrocarbon fuels from H_2O and CO_2. The implementation of the solar research plant is a joint effort of the European project partners and comprises:
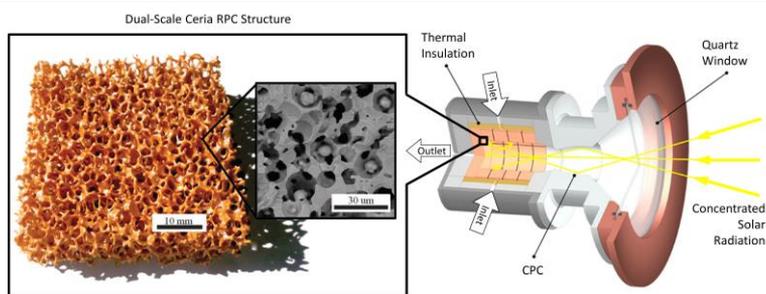
- a high-flux solar concentrating subsystem
- a solar thermochemical reactor subsystem, and
- a gas-to-liquid conversion subsystem.

The long-term perspective is to establish a solar fuel supply for demanding transportation sectors, such as aviation, which cannot easily substitute hydrocarbon fuels by electromobility or hydrogen.

The participants will have the opportunity to visit the experimental facility during the demonstration event.

- **250 kW high-flux solar concentrating system**
  - 50 kW radiative power at 2500 kW/m^2 over 16 cm aperture
  - Fully-dedicated heliostat field of 169 heliostats, 3-m^2 each, with short focal lengths.
- **50 kW solar thermochemical reactor system**
  - 50 kW solar reactor system for producing syngas from H_2O and CO_2 via ceria based thermochemical redox cycle
  - Boost reactor efficiency by factor of 3 (from average 2% to average 6%)
- **Gas-to-liquid conversion Fischer-Tropsch system**
  - Fischer-Tropsch system to convert the syngas to liquid hydrocarbon fuels

Logistics

◐ Accommodation

IMDEA recommends the following hotels:

◑ Hotel Ciudad de Móstoles (Closest hotel)

Ctra. Móstoles-Villaviciosa de Odón Km. 0,200; 28931, Móstoles, Madrid
Tel: +34 916 140 669, Email: recepcion@h-ciudadmostoles.com
http://www.hotelciudaddemostoles.es/en
Hotel is 10 minutes walk away from IMDEA premises, 8 minutes walk from the train station El Soto and 20 minutes walk from the metro station Universidad Rey Juan Carlos (see map below).
Booking can be made by phone or per e-mail.
IMDEA reduced rates: 75€ for a double room, breakfast and VAT included
65€ for a single room, breakfast and VAT included. Please provide the booking reference IMDEA to avail this price.

◑ Sercotel Spa La Princesa

Carretera M-506 Km. 9, salida Móstoles centro, 28922 Móstoles, Spanien
https://www.laprincesa.com/
Hotel is about 1.9 km from the train station renfe Mostoles central. From there you may take a train to Mostoles El Soto station to IMDEA.
Price about 65 euro per night (breakfast not included)

◑ Hotel Ibis budget Madrid Alcorcón Móstoles (cheapest option)

Travesía de Móstoles n°3 N 40°20'2.75''W 3°51' 14.60, 28921, Alcorcón, Spain
http://www.ibis.com/gb/hotel-3201-ibis-budget-madrid-alcorcon-mostoles/index.shtml
Hotel is about 1.2 km from train Station of Mostoles Central. From there you may take a train to Mostoles El Soto station to visit IMDEA.
Price about 43 Euro per night (breakfast not included)

◑ Hotel NH Alcorcon (another option)

Edificio A, Av. de Europa, 2, 28922 Alcorcón, Madrid, Spain
Hotel website : HotelnhAlcorcon
From hotel you can take metro at station "Parque Oeste" and get out at the next stop "Universidad Rey Juan Carlos". From University just cross the campus and the bridge to IMDEA.
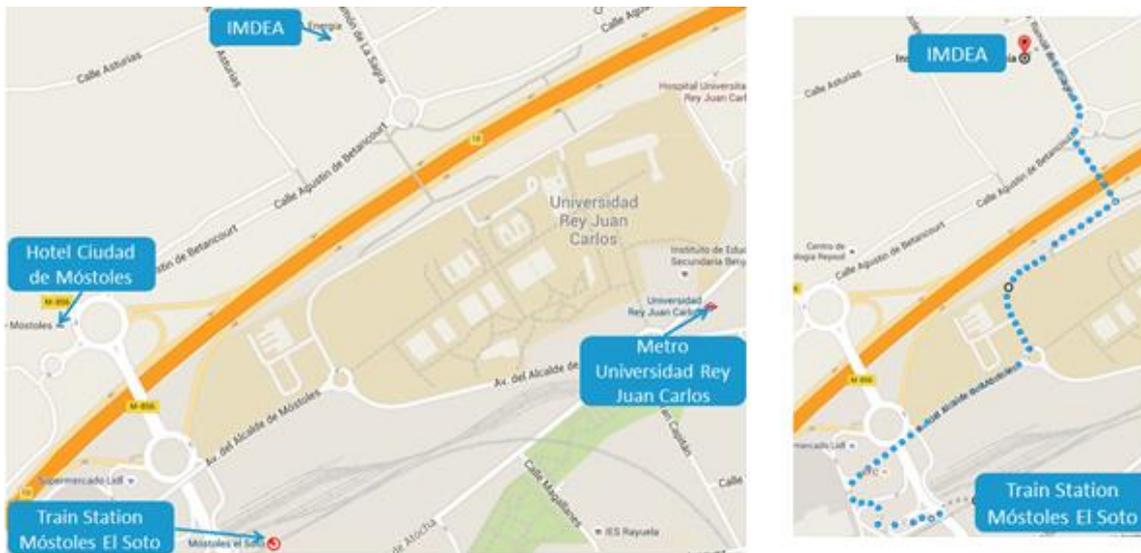Prices between 60-80 Euro per night.

◐ Directions

In case you would prefer staying in Madrid downtown, you will be able to easily reach IMDEA either by metro or by train (see information below). Please count with about 30 minutes journey each way. The city of Móstoles is located in the South West of Madrid and the Airport Madrid-Barajas is in the North East of the city.

IMDEA premises are about 15 to 20 minutes walking distance from the regional train station Móstoles El Soto. It is recommended to **follow a path via the Rey Juan Carlos University Campus** as shown on the right map above.

- **By taxi**
  - From the airport to IMDEA or Hotel Ciudad de Móstoles: count with 30 minutes and between 50-60€
  - From Madrid centre to IMDEA or Hotel Ciudad de Móstoles: count with 25 minutes and between 25-30€

- **By public transport**
  - From the airport, it is recommended to take Airport express shuttle bus (as the train infrastructure is under construction and will require several changes) from all terminals to Atocha Station. It runs every 15 minutes during the day and every 35 minutes at night. Schedule 40 minutes for this journey.
  - Ticket can be purchased in the bus and costs 5 Euro.
  - At Atocha station, take "Cercanias" train , purchase a ticket to Móstoles El Soto. (Cercanías means short-range)
  - From Atocha Station, take the line C5 heading to Móstoles EL Soto, which is the final station. Get off there.
  - It will take you ca. 25 minutes and cost around 2.70 €. The line C5 to Móstoles El Soto departs every 10 minutes.
  - Timetables for regional train can be consulted here.