

# Stanford | ENERGY


Stanford | Energy 3.0 Stanford | Natural Gas Initiative **SUNCAT**  
CENTER FOR INTERFACE SCIENCE AND CATALYSIS

## Hydrogen Workshop agenda

Location: SIEPR GUNN BUILDING  
KORET-TAUBE CONFERENCE CENTER  
366 GALVEZ ST.  
STANFORD UNIVERSITY

Date: March 25 and 26, 2019

Time: 8am - 6pm (Day 1), 8am - 1pm (Day 2)

The Stanford Hydrogen Focus Group appreciates the support of  TRAFIGURA

### Agenda items - Day 1

|                    |   |   |
|--------------------|---|---|
| <b>8:00-8:30</b>   | CONTINENTAL BREAKFAST   |   |
| <b>8:30-9:00</b>   | Hydrogen Economy Overview   | Speaker: Joe Powell, Shell  |
| <b>9:00-11:15</b>  | Hydrogen Generation Panel<br>SMR & CCS (15 min.)<br>Electrochemical (15 min.)<br>Photochemical (15 min.)<br>Pyrolysis (15 min.)<br>Thermochemical (15 min.)<br>Biochemical (15 min.)<br>Panel & Q/A (30 min.) | Panel:<br>Jim Seaba, (GTI)<br>Tom Jaramillo (Stanford)<br>Paul McIntyre (Stanford)<br>Rob Hanson (Monolith)<br>Will Chueh (Stanford)<br>Alfred Spormann (Stanford)<br><br>Moderator: Xiaolin Zheng (Stanford) |
| <b>11:15-12:00</b> | NETWORKING BREAK AND LUNCH  |   |

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|-------------------|---|--|
| <b>12:00-1:00</b> | Lunch Presentation on Scaling Electrolyzers   | Speaker: Stephen Szymanski, Nel  |
| <b>1:00-2:45</b>  | <p>Hydrogen Storage &amp; Distribution Panel I</p> <p>Liquid &amp; Gaseous Hydrogen (15 min.)</p> <p>Natural Gas Infrastructure (15 min.)</p> <p>H2 Transport &amp; Fueling Stations in Japan (15 min.)</p> <p>Shipping of Liquid Hydrogen (15 min.)</p> <p>Integrating Sustainable H2 via Existing Natural Gas Infrastructure (15 min.)</p> <p>Panel &amp; Q/A (30 min.)</p>   | <p>Panel:</p> <p>Karine Boissy-Rousseau (Air Liquide)</p> <p>Don Chahbazpour (National Grid)</p> <p>Joe Cappello (Iwatani)</p> <p>Katsuya Ishikawa (Kawasaki)</p> <p>Marc Panu (Texas A&amp;M)</p> <p>Moderator: Mike Davies (Trafigura)</p>                                       |
| <b>2:45-3:15</b>  | BREAK   |  |
| <b>3:15-5:00</b>  | <p>Hydrogen Storage &amp; Distribution Panel II</p> <p>Renewable Methanol: A Scalable and Sustainable H2 Storage &amp; Distribution Solution (15 min.)</p> <p>Methanol as a H2 Carrier and a Path to Decarbonization (15 min.)</p> <p>Ammonia as a Hydrogen Carrier (15 min.)</p> <p>Liquid Organic H2 Carrier Technology for H2 Storage &amp; Transportation in Large Scale (15 min.)</p> <p>Solid State Materials for H2 Storage (15 min.)</p> <p>Panel &amp; Q/A (30 min.)</p> | <p>Panel:</p> <p>Matteo Cargnello (Stanford)</p> <p>Paul Wuebben (Methanol Institute/Carbon Recycling Intl.)</p> <p>Stephen Crolus (Ammonia Energy Assoc.)</p> <p>Yoshimi Okada (Chiyoda)</p> <p>Mark Allendorf (Sandia National Lab.)</p> <p>Moderator: Jimmy Chen (Stanford)</p> |
| <b>5:00-5:15</b>  | RECAP   |  |
| <b>5:15-6:00</b>  | RECEPTION WITH POSTERS PRESENTATION   |  |
| <b>6:00</b>       | DINNER  |  |

## Agenda items - Day 2

|                    |  |  |
|--------------------|--|--|
| <b>8:00-8:30</b>   | CONTINENTAL BREAKFAST  |  |
| <b>8:30-9:00</b>   | A Hydrogen Economy: Past and Present Promises and Barriers   | Speaker: Eric McFarland (UCSB)   |
| <b>9:00-10:30</b>  | Hydrogen for Mobility and Stationary Panel<br>Fuel Cells for Mobility (15 min.)<br>H2 Mobility: Combustion to Fuel Cells (15 min.)<br>Fuel Cells for Stationary (15 min.)<br>H2 Combustion for Stationary (15 min.)<br>Panel & Q/A (30 min.) | Panel:<br>Jared Farnsworth (Toyota)<br>Monterey Gardiner (BMW)<br>Rob Del Core (Hydrogenics)<br>Jostein Pettersen (Equinor)<br>Moderator: Fritz Prinz (Stanford) |
| <b>10:30-11:00</b> | BREAK  |  |
| <b>11:00-11:45</b> | Market Policies for a Hydrogen Economy   | Speaker: David Park (CA Fuel Partnership)  |
| <b>11:45-1:15</b>  | NETWORKING LUNCH / ADJOURN   |  |