

**2024 Advanced Water Splitting Technologies Benchmarking Workshop Agenda**

Location: ASU California Center  
1111 S. Broadway, Los Angeles, CA 90015

*\*All times are USA Pacific Daylight Time (PDT)*

Agenda Item	Location	Start	End	Duration	Zoom Mtg # 851 9042 2293 (Password = Plenary)	
	<b>Mon June 10</b>	<b>6:00 PM</b>	<b>7:30 PM</b>	<b>1:30:00</b>		
Optional Welcome Reception	Hoxton Hotel Cabra- Rooftop Bar 1060 S Broadway Los Angeles, CA	6:00 PM	7:30 PM	1:30:00	N/A	
	<b>Tues June 11</b>	<b>8:00 AM</b>	<b>8:00 PM</b>	<b>13:00:00</b>		
Welcome - James Vickers, DOE	ASU California Center 1111 S. Broadway Los Angeles, CA	8:00 AM	8:15 AM	0:15:00	Plenary Zoom Link	
Benchmarking Project Overview & Meeting Goals - Olga Marina (PNNL)		8:15 AM	8:40 AM	0:25:00		
International #1: HTE - Dr. Stephen J. McPhail, International Business Development Manager Hydrogen: Kiwa		8:40 AM	9:05 AM	0:25:00		
International #2: PEC - Dr. Francesca Toma- Institute of Functional Materials for Sustainability: Helmholtz-Zentrum Hereon (Germany)		9:05 AM	9:30 AM	0:25:00		
International #3: STCH - Drs. Alicia Bayon and Alberto de la Calle		9:30 AM	9:55 AM	0:25:00		
International #4: LTE - Egil Rasten, Sr. Technologist Nel Hydrogen Alkaline Electrolyzers (Norway)		9:55 AM	10:20 AM	0:25:00		
Logistics, Guidelines for Breakout Sessions		10:20 AM	10:30 AM	0:10:00		
BREAK		10:30 AM	10:55 AM	0:25:00		
Walk to Breakout		10:55 AM	11:05 AM	0:10:00		
Breakout #1		11:05 AM	12:10 PM	1:05:00		See Breakout Table
Walk to Plenary for Working Lunch		12:10 PM	12:20 PM	0:10:00		
Working Lunch Presentations: ARCHES Hydrogen Hub: Adam Weber (LBNL), Platinum Sponsor: SoCal Gas		12:20 PM	1:35 PM	1:15:00		Plenary Zoom Link
Walk to Breakout		1:35 PM	1:45 PM	0:10:00		
Breakout #2		1:45 PM	2:50 PM	1:05:00		See Breakout Table
Walk To Breakout		2:50 PM	3:00 PM	0:10:00		
Breakout #3		3:00 PM	4:05 PM	1:05:00		See Breakout Table
Walk to Plenary		4:05 PM	4:15 PM	0:10:00		
Day 1 Summary		4:15 PM	4:40 PM	0:25:00		Plenary Zoom Link
Group Photo	4:40 PM	5:00 PM	0:20:00			
Optional Networking and Hosted Dinner		6:00 PM	8:00 PM	2:00:00	N/A	
Agenda Item	Location	Start	End	Duration		
	<b>Wed June 12</b>	<b>8:00 AM</b>	<b>12:00 PM</b>	<b>4:00:00</b>		
Platinum Sponsors: Arizona State University- Ellen Stechel	ASU California Center 1111 S. Broadway Los Angeles, CA	8:00 AM	8:20 AM	0:20:00	Plenary Zoom Link	
Reminder on Logistics		8:20 AM	8:25 AM	0:05:00		
Walk to Breakout		8:25 AM	8:35 AM	0:10:00		
Breakout #4		8:35 AM	9:40 AM	1:05:00		See Breakout Table
Break and walk between Breakouts		9:40 AM	10:10 AM	0:30:00		
Breakout #5		10:10 AM	11:15 AM	1:05:00		See Breakout Table
Walk to Plenary		11:15 AM	11:25 AM	0:10:00		
Wrap Up - Full Group		11:25 AM	12:00 PM	0:35:00		Plenary Zoom Link
Adjourn @ 12:00 PM		12:00 PM	12:00 PM	0:00:00		

2024 6th Annual Advanced Water Splitting Technology Pathways: Benchmarking and Protocols Workshop - Breakout Sessions

Session #	Session ID	Technology	Topic	Lead	Scribe	Room #	Zoom Link	Zoom Mtg #	Zoom Pwd	Mural Board Link
1	H1	HTE	HTE Priority Research Opportunities	Xingbo Liu (WVU)	Chris Coyle (PNNL)	254	<a href="#">HTE Zoom</a>	860 4171 5544	351927	<a href="#">Mural Board Link</a>
1	L1-A	LTE	PEM: Priority research opportunities: Components	Serafina Fortiner (Nel Hydrogen)	Nick Oliveira (Nel Hydrogen)	Plenary	<a href="#">LTE-A Zoom</a>	851 9042 2293	Plenary	<a href="#">Mural Board Link</a>
1	L1-B	LTE	Alkaline: Priority research opportunities for separators/membranes	Anthony Ekennia (U of Oregon)	Manasa Rajeev (U of Oregon)	145	<a href="#">LTE-B Zoom</a>	810 9256 0693	BENCH24	<a href="#">Mural Board Link</a>
1	P1	PEC	Priority Research Opportunities: Light absorber, Catalysts and Membranes	Joel Haber (Caltech)	Todd Deutch (NREL)	245	<a href="#">PEC Zoom</a>	831 3136 2748	939602	<a href="#">Mural Board Link</a>
1	S1	STCH	TCH Metrics	Michael Sanders (Mines)	Kent Warren (U Colorado)	249	<a href="#">STCH Zoom</a>	393 875 1138	Meeting	<a href="#">Mural Board Link</a>
2	H2	HTE	Comparing Durability and Performance	Long Le (PNNL)	Nicholas Kane (INL)	254	<a href="#">HTE Zoom</a>	860 4171 5544	351927	<a href="#">Mural Board Link</a>
2	L2-A	LTE	PEM: Durability and AST test protocols	Rangachary Mukundan (Mukund) (LBNL)	Shaun Alia (NREL)	Plenary	<a href="#">LTE-A Zoom</a>	851 9042 2293	Plenary	<a href="#">Mural Board Link</a>
2	L2-B	LTE	Alkaline: Priority research opportunities for catalyst/electrode materials	Melissa Kreider (NREL)	Emily Volk (NREL)	145	<a href="#">LTE-B Zoom</a>	810 9256 0693	BENCH24	<a href="#">Mural Board Link</a>
2	P2	PEC	PEC System Demonstration and Validation: what does a successful PEC pilot system look like in 2030	Zetian Mi (U. Michigan)	Sol A Lee (Caltech)	245	<a href="#">PEC Zoom</a>	831 3136 2748	939602	<a href="#">Mural Board Link</a>
2	S2	STCH	Test Protocols and Publications	Sean Bishop (Sandia)	Kent Warren (U Colorado)	249	<a href="#">STCH Zoom</a>	393 875 1138	Meeting	<a href="#">Mural Board Link</a>
3	L3-A	LTE	PEM & Alkaline: Priority Research Opportunities - Stack & Cell Testing Gates for Qualification	Balsu Lakshmanan (Versogen)	Nadia E.Tolouei (UC Irvine)	Plenary	<a href="#">LTE-A Zoom</a>	851 9042 2293	Plenary	<a href="#">Mural Board Link</a>
3	L3-B	LTE	Alkaline: Standardization Needs and test protocols to be written	Grace Lindquist (HGen)	Manasa Rajeev (Univ of Oregon)	145	<a href="#">LTE-B Zoom</a>	810 9256 0693	BENCH24	<a href="#">Mural Board Link</a>
3	H3	HTE	Standardization Needs and Protocols to be written	Hanping Ding (UO)	Zeyu Zhao (INL)	254	<a href="#">HTE Zoom</a>	860 4171 5544	351927	<a href="#">Mural Board Link</a>
3	P3	PEC	PEC HydroGEN Seedling Projects Cross-Cutting Discussion	Todd Deutsch (NREL)	Joel Haber (Caltech)	245	<a href="#">PEC Zoom</a>	831 3136 2748	939602	<a href="#">Mural Board Link</a>
3	S3-A	STCH	Value Proposition and Roadmap	Sean Bishop (Sandia)	Kent Warren (U Colorado)	249	<a href="#">STCH Zoom</a>	393 875 1138	Meeting	<a href="#">Mural Board Link</a>
4	C4-A	Cross Cutting	Addressing AWST Benchmarking A+'s: Accessibility, Acceptance, Application, Advancement, Adherence	Karl Gross (H2 Technology Consulting)	TBD	245	<a href="#">PEC Zoom</a>	831 3136 2748	939602	<a href="#">Mural Board Link</a>
4	C4-B	Cross Cutting	Setting Common Metrics for LTE, HTE, PEC, STCH	Ellen Stechel (ASU)	TBD	Plenary	<a href="#">LTE-A Zoom</a>	851 9042 2293	Plenary	<a href="#">Mural Board Link</a>
4	C4-C	Cross Cutting	Protocol Validation- Best Practices & Lessons Learned from LTE team	Sarah Park (LANL)	Andrew Boudreau (NREL)	254	<a href="#">HTE Zoom</a>	860 4171 5544	351927	<a href="#">Mural Board Link</a>
4	C4-D	Cross Cutting	Recycling of PEM electrolyzer materials/components and a look ahead for other water splitting technologies	Shuang Ma Anderson (U of Southern Denmark)	Ai-Lin Chang (NREL)	249	<a href="#">STCH Zoom</a>	393 875 1138	Meeting	<a href="#">Mural Board Link</a>
5	L5-A	LTE	AEM & PEM: Validation of protocols	Su Min Ahn (LANL)	Minkyung Kwak (U of Oregon)	Plenary	<a href="#">LTE-A Zoom</a>	851 9042 2293	Plenary	<a href="#">Mural Board Link</a>
5	L5-B	LTE	AEM & PEM: System materials compatibility	Nick Oliveira (Nel Hydrogen)	Serafina Fortiner (Nel Hydrogen)	145	<a href="#">LTE-B Zoom</a>	810 9256 0693	BENCH24	<a href="#">Mural Board Link</a>
5	H5	HTE	HTE Protocol Validation	Neal Sullivan (CSM)	Jeremy Hartvigsen (INL)	254	<a href="#">HTE Zoom</a>	860 4171 5544	351927	<a href="#">Mural Board Link</a>
5	P5	PEC	Hybrid PEC systems and New Opportunities (alternative oxidation or redox chemistry, coupling with STCH or CO2 conversion, etc)	Shane Ardo (UC Irvine)	Aaron Kaufman (Univ of Oregon)	245	<a href="#">PEC Zoom</a>	831 3136 2748	939602	<a href="#">Mural Board Link</a>
5	SS-A	STCH	Thermo-electro-chemistry	Jim Miller (ASU)	Sean Bishop (SNL)	249	<a href="#">STCH Zoom</a>	393 875 1138	Meeting	<a href="#">Mural Board Link</a>

Session IDs	
L	LTE
H	HTE
P	PEC
S	STCH
C	Cross-Cutting