

3rd Thermal-Mechanical- Chemical Energy Storage Workshop

August 10-11, 2021

San Antonio, Texas

Klaus Brun, Elliott Group

Chair

Timothy Allison, Southwest Research Institute

Co-Chair

3rd Thermal-Mechanical-Chemical Energy Storage Workshop Agenda

Day 1 – Tuesday, August 10, 2021

7:30 – 8:15 **Registration and Breakfast**

8:15 – 8:30 **Welcome and Introduction/Safety**

Dr. Klaus Brun – Elliott Group, Conference Chair

Adam Hamilton – SwRI, President and CEO

8:30 – 9:00 **Keynote Speaker**

Joe Stekli – EPRI

9:00 – 9:30 **Keynote Speaker – U.S. DOE Energy Storage and Electric Grid Initiatives**

Michael Pesin – DOE

9:30 – 10:00 **Technical Presentation – TMCES Technology Overview and Research Activities**

Dr. Tim Allison – SwRI, Conference Co-chair

10:00 – 10:15 **Break**

10:15 – 10:45 **Technical Presentation – Hydrogen Pipelines & Storage**

Dr. Rainer Kurz – Solar Turbines

10:45 – 12:15 **Panel Session – Short Presentations/Technology Updates**

Joshua Schmitt – SwRI

Dr. Cliff Ho – Sandia National Laboratories

Daniel Stack – Electrified Thermal Solutions

Dr. Benjamin Bollinger – Malta, Inc.

Dr. Natalie Smith – SwRI

Dr. Todd Bandhauer – Colorado State University

Shaun Sullivan – Brayton Energy

Dr. Jeffrey Moore – SwRI

Dr. Joerg Petrasch – Michigan State University and RedoxBlox

Aaron Rimpel – SwRI

12:15 – 1:00 **Lunch**

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Day 1 – Tuesday, August 10, 2021

1:00 – 1:30 **The Role of Energy Storage in Helping California Meet the State's Future Zero Carbon Energy Goals**

Mike Gravely – California Energy Commission

1:30 – 2:00 **Technical Presentation – Electrothermal Energy Storage System**

Chris Fraughton – MAN Energy Solutions

2:00 – 2:30 **Technical Presentation – Materials for Hydrogen Compression**

Derrick Bauer – Elliott Group

2:30 – 2:45 **Break**

2:45 - 4:00 **Panel Session – New Technology**

Ben Jawdat – Revterra

Thomas Buscheck – Lawrence Livermore National Laboratory

Peter Luessen – Mitsubishi Hitachi Power Systems

Ben Peterson – EERC

Dr. William Conlon – Pintail Power

Bernard Winkelmann – Nikola Motor

4:00 - 4:30 **Technical Presentation – Variable Blading in Closed-Cycle Brayton Energy Storage**

Dr. Robert Laughlin – Stanford University

4:30 – 5:30 **Open Forum Discussion**

5:30 – 5:35 **Closing Comments Day 1**

Dr. Klaus Brun – Elliott Group, Conference Chair

Dr. Tim Allison – SwRI, Conference Co-chair

3rd Thermal-Mechanical-Chemical Energy Storage Workshop Agenda

Day 2 – Wednesday, August 11, 2021

7:30 – 8:15 **Breakfast**

8:15 – 8:20 **Welcome/Recap Day 1**

Dr. Klaus Brun – Elliott Group, Conference Chair

8:20 – 8:50 **Technical Presentation - Compressed Air Energy Storage**

Robert Bailie - Siemens Energy

8:50 – 9:20 **Keynote Speaker – Energy Storage Evolution in California**

Natasha Keefer – Clean Power Alliance

9:20 – 9:50 **Technical Presentation – Development of sCO₂ Turbomachinery and its Application to Energy Storage**

Dr. Jeffrey Moore – SwRI

9:50 – 10:05 **Break**

10:05 – 10:35 **Technical Presentation – Heat Exchangers for Thermal Energy Storage: Challenges and Mitigation**

Tony Bowdery – Heatric

10:35 – 11:35 **Panel Session – Storage Deployment**

Mike Matson – Storworks Power

Richard Brody – Quidnet Energy

Dr. Timothy Held – Echogen Power Systems

Russ Weed – Advanced Rail Energy Storage

Peter Luessen – Mitsubishi Hitachi Power Systems

11:35 – 11:45 **Closing and Wrap-up**

Dr. Klaus Brun – Elliott Group, Conference Chair

Thank you to the TMCES Workshop Organizing Committee

<i>Klaus Brun, Chair</i>	<i>Elliott Group</i>	<i>Scott Hume</i>	<i>EPRI</i>
<i>Briggs White, Co-Chair</i>	<i>DOE</i>	<i>Carlos Koeneke</i>	<i>Mitsubishi Power</i>
<i>Tim Allison, Co-Chair</i>	<i>SwRI</i>	<i>Rainer Kurz</i>	<i>Solar Turbines</i>
<i>Mark Anderson</i>	<i>University of Wisconsin</i>	<i>Renaud Le Pierres</i>	<i>Meggitt PLC</i>
<i>Robert Bailie</i>	<i>Siemens</i>	<i>Dorothea Martinez</i>	<i>SwRI</i>
<i>Christy Bash</i>	<i>Elliott Group</i>	<i>Josh McTigue</i>	<i>NREL</i>
<i>Derrick Bauer</i>	<i>Elliott Group</i>	<i>Rachel Pyle</i>	<i>Elliott Group</i>
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<i>Arnold Feldman</i>	<i>ASME/JJDS Environment</i>	<i>Joe Stekli</i>	<i>EPRI</i>
<i>Chris Fraughton</i>	<i>MAN Energy Solutions USA Inc.</i>	<i>Craig Turchi</i>	<i>NREL</i>
<i>Sebastian Freund</i>	<i>Energiefreund Consulting</i>	<i>David Voss</i>	<i>Solar Turbines</i>
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<i>Douglas Hofer</i>	<i>Heliogen</i>		

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and the U.S. DOE Office of Fossil Energy for their leadership and
organizational support of the workshop.



Thank you to Elliott Group for providing administrative
and logistical support for this workshop.



Thanks for attending.

Let's have two
productive days.

Klaus Brun, Elliott Group

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