

Shanthan Kumar 10:26 AM

What is the difference between shaded lines and solid lines?

Diego Ceotto 10:28 AM

For energy transport/recovery what is better: salt, liquid metals or nanofluids?

Sandy B 10:33 AM

Weren't the economics of Spain based on a huge feed-in tariff, which was cancelled in the Great Recession?

Anonymous Attendee 10:36 AM

I'm from China. My company built the first project in China. Can I have the speakers' email addresses?

Anonymous Attendee 10:42 AM

What about thermal shock to compressors/turbines if you use reversible ones?

Arjun Thangaraj R 10:43 AM

How didn't anyone think of this before?

Nicholas Crnkovich 10:43 AM

What is the biggest obstacle to employment of molten salt storage?

Anonymous Attendee 10:44 AM

Where is the largest thermal salt facility currently? How large is it?

Tengfei Luo 10:44 AM

any plan to demonstrate this storage technology?

Arif Susetyo 10:44 AM

What would be the Cycle efficiency of the Brayton Battery Storage System, in relation to the energy Input to the energy regeneration? Thank you for the presentation. Very interesting concept.

Girish Kini 10:45 AM

Is storing the salt at high temperatures an issue? How do the ambient losses scale with time?

TJ Zhang 10:45 AM

Besides salts, is there a better working fluid for reversible heat storage?

Deep 10:46 AM

Given the significant progress in the last few decades, what are presently the biggest challenges in gas turbine technology?

Rupam Ghosh, NYAS, NY 10:47 AM

If someone wants to use the Brayton Battery energy in a smaller dimension container? I am asking the question because I am the Inventor of Thermal Cooling Jacket (Patented in 2017) & this includes Peltier, fans & other stuffs which operates on Li-Ion battery so the problem is same that time is very crucial?

This project is under R&D, I am now an undergrad student in India and a Member of The New York Academy of Sciences, wish to meet you in future, Professor!

Anonymous Attendee 10:49 AM

(Anonymous Question): To Prof. Laughlin, do you have any other suggestions or ideas about an efficacy of the thermochemical storage using other chemical mediums such as hydrogen?

Arif Susetyo 10:52 AM

What is the temperature profile and pinch temperature profile of the Molten salt? What is the material consideration for the heat exchanger, and the fluid pumps?

Dung Vu 10:53 AM

Hi, thank you for the very interesting talk. A question for Professor Laughlin: It is still unclear to me how the Brayton battery produces less footprint than say, a hydro pump. It is clear that one stores energy in the form of potential energy, which scales with height; and one stores energy in the form of heat which scales with temperature (assuming no phase change). Could you elaborate on the scaling factor for each technology e.g. how much energy 1 liter of liquid can potentially hold to make it clear about the footprint claim? Thank you.

Pau Farres-Antunez 10:54 AM

For Bob: Great presentation! Could you discuss on the materials that are most suitable for the cold thermal stores? Thanks.

Anonymous Attendee 10:54 AM

Comparing thermal energy storage and thermochemical energy storage, which one is more promising?

Anonymous Attendee 11:02 AM

Dr. Laughlin mentioned we should keep semiconductors out of the grid and rely on mechanical components. However, TPVs are semiconductor-based devices. So, I'm curious to hear what the participants have to say about this.

Raimondo Cecchini 11:02 AM

Is there any advantage to use thermoelectric generators to convert the stored heat into electricity?

Wonjae 11:02 AM

If we use high temperature heat from the thermal storage in industry, the storages are needed to be installed near the plant using high temperature. How to address this problem?

Pau Farres-Antunez 11:02 AM

A question for Alejandro and Asegun: would it be possible to use CCGT instead of thermo-photovoltaics? What are the relevant temperature limits?

Stefan Maier 11:04 AM

how much of a problem is the creation of entropy when using phase change materials?

Wonjae 11:04 AM

Isn't it not difficult to insulate the heat? What is the losing rate of the heat?

Anonymous Attendee 11:04 AM

Which of these technological options (or other) can be used in CSP-desalination plants?

Linxiao Zhu 11:05 AM

For using thermophotovoltaics for harvesting radiation from a high temperature source such as 1400 °C or even higher, what is the requirement on maintaining the photovoltaic cell at low temperature, is active cooling required?

Anonymous Attendee 11:05 AM

Where are the biggest challenges in these high temperatures solutions from an exergy standpoint? Finding insulation materials for such high temps? TPV efficiency?

Christopher Pantayatiwong Liu 11:07 AM

Any thoughts on the feasibility and sustainability of energy extraction from municipal waste, particularly with plastics?

Anonymous Attendee 11:10 AM

What are the most exciting opportunities for high temperature thermal storage? Materials? Are there any opportunities for new thermal sciences?

Patrick 11:12 AM

Silica

William James Sawyer 11:16 AM

Another materials question for Bob: Do you see a benefit to new turbine materials (or other developments) to enable operation at higher temperatures, or are turbines already 'sufficient' in this application?

Max CJ 11:19 AM

How do you deal with mechanical stress in the vessel from cold to hot?

Arif Susetyo 11:24 AM

Can the proposed energy storage technologies beat the efficiency of pumped storage cycle efficiency of 80 something %?

Anonymous Attendee 11:24 AM

Sensible heat storage or latent heat storage would be more practical and cost-effective?

Earis, Philip J. (ELS-LOW) 11:25 AM

Another very stimulating session - thanks to everyone. In terms of future suggestions though - leaving aside the topics, please do consider the gender diversity of the speakers / panelists. Thanks!

wgy 11:27 AM

Topic suggestion: Ultra high heat flux cooling

Christopher Pantayatiwong Liu 11:27 AM

Please add energy extraction from municipal solid waste (particularly plastics) as a topic!

Anonymous Attendee 11:27 AM  
Phase change heat transfer

Lindsay Walter 11:27 AM  
Would it be possible to include more women panelists?

Anonymous Attendee 11:28 AM  
thank you

Mona 11:29 AM  
Please keep this going for

Christopher Pantayatiwong Liu 11:29 AM  
As a second year ChemE undergrad, what are some topics I should be paying special attention with regards to thermal energy storage?

Mona 11:29 AM  
longer times. It allows access to all scientists and students across the world.

varun 11:39 AM  
Suggestion for topics - "predicting extreme climate events - what is the state of the art?"

Nicholas Jankowski  
Can you comment on the ability to switch a LHTPV battery on and off, and the impact of the 'off state' storage losses? Is there a high temperature mechanical/thermal material challenge still to be solved there?

Nicholas Jankowski  
Professor Laughlin's summary of thermal storage plants included the one US 250MW Solana plant. Noting that was an out of date list, have there been more US based deployments? Has there been any significant technology change from those designs and where is the research need?

Nicholas Jankowski  
a broad question for any/all panelists: what are the high temperature heat transfer material challenges and leading potential research topics in that direction?

Nicholas Jankowski  
web browser participants can't do zoom polls. can the topics be read aloud so we can use the Q&A to voice opinions?