

Amiyo Basu 10:11 AM

Latest development of low cost Li Ion batteries.

Patty Weisensee 10:12 AM

Suggestion for future topic: thermal management in aero- and spacecraft operation (e.g. hypersonic flight, re-entry, etc)

Patty Weisensee 10:12 AM

Other topic suggestion: thermal (e.g. solar) desalination

Divya Chalise 10:43 AM

How can battery local hotspot be 100s of degrees higher in realistic case? Local current non-homogeneity can only give few degrees higher hotspot. So how is the increased kinetics realistic for a real battery, not under laser heating? (except for dendrite shorting case, which already has a dendrite)

Jun Xia 10:53 AM

I think for battery thermal management, one key issue is sudden temperature rise inside a battery cell, which will run over the capacity of the designed thermal management system. Do we now have a good understanding of why such sudden temperature rises occur inside a battery? Thanks.

Shang Zhu 10:54 AM

Thank you, Prof. Cui. One question on the local hotspot of anode surface, I assume that graphite might be a good thermal conductor, how much un-uniformity can a fast charging battery achieve at the anode surface in real world? And furthermore, will moving to LMB solve the issue here since metal may have a higher thermal conductivity?

Juner Zhu 11:12 AM

Thanks for the excellent talks. One question to all our speakers: as next-generation batteries are being developed, what types of new challenge of thermal management systems can we expect?

Yangying Zhu 11:14 AM

It seems the thermal management is mainly from outside the battery. Could internal thermal management without compromising energy density too much be worth pursuing in combination with cooling the exterior?

Weijiang 11:17 AM

Question for Prof. Cui: which non-flammable liquid electrolyte system do you think can make a good balance between the battery electrochemical performances and safety?

Sarpotdar.Shekhar 11:20 AM

Can this technology be used for pouch cells, considering differences in topology and requirement for compression?

Cody L Jacobucci 11:22 AM

For Dr Eric Darcy: How far are we from electrified urban air mobility and hybrid medium to long range flight? It is hard to overcome the fact that a good portion of batteries is dead mass in flight once used and that energy densities are still low compared to fuels- but it is essential that we solve it to reduce aviation emissions.

Qianli 11:22 AM

One question for Ahmad Pesaran: From your ppt, the liquid cooling can maintain the calendar life of lithium ion battery as ten years, does it mean liquid cooling is enough to cool the battery pack?

Anonymous Attendee 11:23 AM

Question about ionic migration heat parts of total heat generations. How to understand it?

Arun das 11:32 AM

Thank you for arranging the discussion. It was an eagle eye view which will take a starter like me to take months to understand. I looking forward to more presentations like this.

Anonymous Attendee 11:33 AM

Just a suggestion, in case you don't do it currently: Please add hyperlinks to the papers, companies, software, projects/programs that were mentioned in the comments section of the YouTube video, and mention to attendees that they will be there. That makes it easier for everybody to follow up on things that were mentioned in the webinar.

Nicholas Jankowski

A 2011 GM study (SAE 2011-01-1373) on temp effects on their Voltec battery system showed that % available rated battery power plateaus between 20-40C, and rolls off steeply both above (as stated earlier) AND below this range due to 'sluggish' chemistry. As vehicles need to operate over a temp range much wider than this, and we want to maximize battery energy and power density, what temperature \_control\_ strategies need to be focused on to address the widely varying cold start, climate, and other environmental ranges?

Nicholas Jankowski

Prof. Pesaran: for current SOA vehicle battery packs, is heat generation volumetrically uniform? On what scale are the cell thermal time constants relative to realistic vehicle heating transients, and are we near the point where we can't just apply external cooling schemes and need to look at integrating thermal design into the cell itself?

Anonymous Attendee

Future topic: ultra-low thermal conductivity materials/insulators, maybe looking for a range of experts on both bulk and thin film or integrated options.