

#	Question	Asker Name
1	can we get the recordings of this session after this session is over?	Vikas Verma
2	Most awaited session, Greeting from the IIT Bombay	Naimish S Pandya
3	Ken: Part of your face on the left side is missing due to a very bright light.	Anonymous Attendee
4	minor request: could you repeat the reference for the plot at the beginning on the transition from diffusive to ballistic transport at different feature scales?	Nicholas Jankowski
5	What are the future research prospects for the heat pipe working with novel hybrid nanofluids, for the electronic cooling application?	Anonymous Attendee
6	When plating materials to control their thermal conductivity, how are defects (for example, cracks) affect the performance? If defects are detrimental for the performance, how are they avoided?	Georgios Dimitrakopoulos
7	How can one transport Li ion along the C axis and get the 10X thermal conductivity?	Anonymous Attendee
8	The thermal conductivities of the metal-electroplated polymer porous structures are quite high. Is this due to the high volume fraction of the metal and good contacts between the metal ligaments?	Xiulin Ruan
9	Thank you for the great talk, Ken. About the micro channel cooling of power transistor, are you stably using boiling or staying at single-phase? How about the future? Another question. MoS ₂ + Li tunable thermal conductivity is interesting. Why not graphite + Li?	Shigeo Maruyama
10	In electronic cooling applications, how close are we to the physical limits of what can be done in solids and liquids?	jorge.alvarado
11	Prof. Goodson, Thank you for the great talk. How do you see the feasibility of implementing phase change cooling (flow boiling/evaporation) in large scale commercial systems such as datacenters?	Chander S. Sharma
12	How many intercalation/deintercalation cycles of MoS ₂ with Li can a sample survive before defoliation of the MoS ₂ ?	Joseph Heremans

13	Thanks a lot for the excellent talk. My question is: how much energy would be consumed for the microchannel cooling in the chips compared to the original cost for power the electronics themselves?	Shang Zhu
14	How do you look at membrane based cooling technologies for data center cooling, especially in high humid regions?	Ajay
15	How can the future of thermal management devices be affected by our understanding of the role optical phonons play in highly enharmonic materials and disordered systems?	Galaxy S7
16	Can we use nanofluids in electronic cooling?	Tejas Mahajani
17	Can you talk about the current status of CFD/thermal modeling for micro-scale electronics cooling devices? Do we still rely mostly on experimental measurements?	Anonymous Attendee
18	can we use solid - liquid phase change for cooling? Has it been tried?	Vikas Verma
19	like melting	Vikas Verma
20	Prof. Goodson. Thank you for your wonderful presentation. What are the future challenges for research and implementation of active and passive thermal management in vertically stacked systems (e.g. 3D packages)? What is your perspective in approaching these challenges?	Khan Rabbi
21	What if we use nanofluids in electronics cooling?	Tejas Mahajani
22	Professor Goodson, I really like your fantastic presentation. I'd like to hear your opinions about the heat transfer in 2-D material. Do you think it's a promising area in the near future? What are the challenges we are facing in that area?	Jiajian Luo
23	Prof. Goodson, am a former visitor to your lab in 2011. How beneficial is it to use organic phase change materials for electronics cooling?	Harish S
24	What is the possibility of using nanofluids in electronic cooling?	Tejas Mahajani
25	you mentioned briefly that there's a 'Transient axis' that has received much less attention for electronics applications below the system level. Where do you see opportunities for package and device level work to address that aspect?	Nicholas Jankowski
26	I would like to know your views on the application of carbon nanomaterial (let's say graphite (HOPG), graphene-based foams or simply graphene) in making high performance heat spreaders. How far can graphene take us in really breaking the limit of thermal cooling?	Sarthak Nag

27	Is it possible to convert generated heat from electronic devices into electricity by thermoelectric devices?	Ali Rajabpour
28	I have not seen lot of work happening with finned heat sinks using phase change composite materials. If we combine this with air-cooling, this should simplify the problems associated with liquid cooling. Please share your experience with this cooling technology.	SKR
29	Thankyou you for your answer	Tejas Mahajani
30	Would you please tell us your opinion about the use of nanofluidic channels in electronic cooling? Thanks!	Anonymous Attendee
31	What are the future research prospects for the heat pipe working with novel hybrid nanofluids, for the electronic cooling application at nanoscale?	Naimish S Pandya
32	Practically, what is the current status of the maximum heat flux removal in electronic cooling?	Anonymous Attendee
33	Hi Sir, thanks for your lecture. Researchers have developed a hydrogel that can both cool down electronics, such as cell phone batteries, and convert their waste heat into electricity. Can hydrogel be used in datacenters?	Raushan Kumar
34	Could you talk about considerations about and recent advancements in cooling under microgravity conditions?	Anonymous Attendee
35	Have you explored MXenes yet?	Muhammad Taha Manzoor
36	Thank you, Ken and all for the very interesting talk. That was very enjoyable.	mark e alston
37	Thanks Ken and Dereje.	Mark Spector
38	I think some aspects of transient thermal management, modeling, phase change, thermal storage, etc., would be valuable.	Nicholas Jankowski