



Center for Energy-Smart
Electronic Systems

A National Science Foundation Industry/University Cooperative Research Center

Industrial Advisory Board Meeting Agenda October 26-28, 2016 University of Texas at Arlington

October 26, 2016

- 3:00 – 5:00 pm Workshop: *Warm Water Cooling Research deep dive - Woolf Hall, Room 413*
- 5:00 – 6:00 pm ***Data Center and Thermal Lab Tours – Nedderman Hall, 114/115***
- 6:00 – 7:30 pm Networking Reception/and Student Poster Preview – ***Carlisle Suite, E.H. Hereford University Center***

October 27, 2016

- 7:30 – 7:55 am **CONTINENTAL BREAKFAST - Red River/Concho, E.H. Hereford University Center**
- 8:00 Welcome /Housekeeping and introduction of new members, partners, and guests:
Andrea Palmeri, Managing Director, ES2 and Dereje Agonafer, Site Director, UT Arlington
- 8:05 Opening Remarks: Jeff Neyland, Chief Information Officer, UTA, and Dr. Erian Armanios, Chair,
Mechanical and Aerospace Engineering, UTA
- 8:30 NSF Evaluator update: Don Price
- 8:35 Center Director Report: Bahgat Sammakia – ES2 Center Director

Project Reports

VIT Projects:

VIT Projects: Siddharth Jabade (VIT), Chetan Khare (Logicare Imbedded Systems)

- 9:00 Project 17: *Data Center Temperature Monitoring and Analysis System*
- 9:20 Project 18: *Investigations on FCMA Soft Starter-Based Screw Compressor Employed in Refrigeration System for Data Center Cooling*
- 9:40 Project 19: *Thermal Analysis of Data Center Using Hybrid (Air and Water) Cooling*
- 10:00 BREAK

Air-cooled

- 10:15 Project 13: *Transient Thermal Response and Control of Data Centers – Jayati Athavale/Joshi (GT)*
- 10:35 Project 4: *Direct and Indirect Evaporative cooling for IT Pods (Phase II)* Ashwin Siddarth,
Agonafer (UTA)
- 10:55 Project 14: *Experimental and Analytical Studies on Transport in Fully and Partially Enclosed Cold Aisles in Air Cooled Data Centers – Sadegh Khalili, Mohammad Tradat (BU)*



Hybrid

11:15 Project 7: *Models and Metrics for Dynamic Air and Hybrid Liquid Cooled Data Centers Based on Computational and Experimental Approaches* – Al Ortega, Marcelo del Valle, Carol Caceres (VU)

Water-cooled

11:35 Project 6: *Dynamic Cold Plates for Effective Cooling of Multi-Core High-End Chip Scale Packages* - Kunal Shah and Agonafer (UTA)

11:55 – 1:35 LUNCH

1:40 Project 15: *Warm Water Cooling in Data Centers Including Water Storage Systems* – Paul Chiarot, Sami Alkharabsheh, Bharath Ramakrishnan, Yaser Hadad (BU)

2:00 Project 11: *Two-Phase Cooling Coupled with Waste Heat Energy Capture from Data Center Environments* – Sebastian Araya, Felipe ValenzuelaGaete and Jerry Jones (VU)

Tools

2:20 Project 1: *Exergy Based Approaches for holistic Design of Energy-Efficient Data Centers* - Faisal Ahmed, Aaron Wemhoff (VU)

Reliability

2:40 Project 10: *Impacts of Particulate and Gaseous Contamination on IT Equipment Where Air Side Economizers Are Implemented* - Pavan Agarwal, Iziren Akhigbe, Agonafer- UTA

3:00 Project 20: *Environmental Acclimation of IT Equipment* – Abel Misrak, Agonafer (UTA)

Emerging Technologies

3:20 Project 16: *An In-Depth Understanding of Oil Immersion Cooling Strategies for Data Centers* - Ashwin Siddarth, Agonafer- UTA

3:40 **BREAK**

Software/Systems Issues

3:55 Project 2: *Energy Proportionality in Data Centers and Benchmarking: Synergistic Management of Workload, IT Equipment and Cooling System* – Ghose (BU)

4:15 ES2-related research at Northeastern University – David Kaeli

4:45 Green Grid White Paper report: “The Performance Indicator – Assessing and Visualizing Data Center Cooling Performance” – Mark Seymour

5:05 Internship experience at Google – Kourosh Nemati

5:15 Review of evening/day 2 activities

5:20 Group Photo

5:30 – 6:30 Reception/Networking/Poster Session/voting on best poster – **Rio Grande B, E.H. Hereford University Center**

6:30 – 8:30 Banquet Dinner – **Red River/Concho, E.H. Hereford University Center**



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October 28, 2016

Hilton Arlington Hotel Meeting Rooms Beverly/Flamingo/Statler

7:30 - 7:50 am

CONTINENTAL BREAKFAST –

8:00

Poster Contest feedback session and announcement of winner and morning activities

8:05

Dr. Peter Crouch – Dean of Engineering, UTA

8:20

L.I.F.E. form review and discussion – led by Don Price

9:15

Guest Presentation – Tom Craft, Commscope

9:45

Concurrent sessions

- IAB Closed Meeting –
- ES2 Directors Meeting -
- Student Leadership Council Meeting -

10:45

BREAK

11:00

Group meeting to discuss IAB Feedback

NOON

Adjourn

Boxed Lunches provided

AT&T Stadium “Cowboys” Tour departure