

Austin, Texas

AMC 2017

www.advancedmetallizationconference.com

Registration & Information

Agenda

Networking

Sponsors



Registration

Registration Check-In & Introduction

Information

Conference Sessions

All sessions will be held in the Double Tree by Hilton Hotel in Phoenix Ballroom Central.

Lunch

Lunch will be provided both days in the Pheonix Ballroom South.

Awards

Best student award will be presented at the Thursday evening reception in the Magnolia room.

Parking

Parking is available at the Double tree by Hilton.
Self parking \$15.00
Valet \$20.00

Transportation



Lyft: Download their free Lyft App
Uber: Download their free Uber App
Public Transportation: capmetro.org/planner
Capital Metro Airport Shuttle: capmetro.org/airport
Yellow Cab: 512-452-9999 or Download their free Hail-A-Cab Austin App

Internet Access

The Double Tree by Hilton provides Wi-Fi connect.
Username: Doubletree_CONFERENCE
Password: **AMC17**

Registration
7:30 am – 8:15 pm

Registration (Pheonix Central Ballroom)
Light Breakfast/ Check-In/ Introduction

Session 1
8:25– 10:20 am

Keynote & Invited Speakers (Pheonix Central Ballroom)
Session chairs: Daniel Edelstein

Scaling and Post-Scaling Industry Trends: From Contacts and Nano-Wires to Neuromorphic Computing
Keynote: Jorge Kittl, Samsung Electronics

Copper and Interconnects Beyond Copper
Invited: Katayayun Barmak, Philips Electronic Professor/Columbia University

Atomistic Simulations of Barrier Properties for BEOL Applications
Invited: Atashi Basu, Applied Materials

..... 15 MIN AM BREAK

Session 2
10:35– 11:55 am

Low Resistance MOL (Pheonix Central Ballroom)
Session chairs: Kevin Fischer & Noel Russel

Fluorine-Free Tungsten Film: Properties, Modeling and Applications as Low Resistance Liner for RCRAM
Contributor: Phillippe Rodriguez, CEA LETI

Metal-to-Metal Interface Cleans for Advanced MOL Interconnects
Contributor: Todd Abrams, GLOBALFOUNDRIES, Inc.

Middle of Line RC Performance and Resistance Optimization Study at 7NM Node
Contributor: Susan Su-Chen Fan, IBM Research Albany NanoTech

Advanced Contact Metallization with Void-Free Cobalt Fill
Contributor: Raymond Hung, Applied Materials

..... GROUP PICTURE 11:55 & LUNCH AT 12:00

Session 3
1:30– 4:10 pm

Special Contacts & MOL (Pheonix Central Ballroom)
Session chairs: Paul Besser & Vimal Kamineni

Contacts in Advanced CMOS: Recent Evolution
Invited: Christian Lavoie, IBM T.J. Watson Research Center

Low Resistance Contacts to Nanoscale FETs
Invited: Krishna Saraswat, Stanford University

Co-Ti Allow for a Barrier and Contact Material in Advanced MOL
Invited: Junichi Koike, Tohoku University

Advanced Contact Metallization with Void-Free Cobalt Fill
Invited: Gert J. Leusink, Tokyo Electron

..... 15 MIN PM BREAK

Panel Session
4:25– 5:30 pm

MOL & Contact (Pheonix Central Ballroom)
Open Discussion with MOL/Contact Metallization: Paul Besser

Christian Lavoie, IBM T.J. Watson Research Center

Krishna Saraswat, Stanford University

Junichi Koike, Tohoku University

Gert J. Leusink, Tokyo Electron

Poster Session
5:30– 6:30 pm

Evening Reception (Pheonix South Ballroom)

Enjoy finger foods and drinks! Don't forget to bring your 2 drink tickets.

Hors d'oeuvres Menu:
Chicken Tequila Burrito, Beef Empanada, Vegetable Pakoras w/ Spicy Tomatoe Dipping Sauce

Registration

7:30 am – 8:15 pm

Registration (Pheonix Central Ballroom)

Light Breakfast/ Check-In

Session 5

8:15– 9:50 am

Interconnect Reliability (Pheonix Central Ballroom)

Session chairs: Daniel Edelstein & Roey Shaviv

Reliable Airgap BEOL Technology in Advanced Interconnects for Substantial Power and Performance Benefits

Keynote: Chris Penny, IBM

A Simulation Study on Advanced Interconnects with Air-Gap

Contributor: Pranita Kerber, IBM Research

FEOL-Aware BEOL Performance Optimization for Interconnect Technology Beyond 7NM

Contributor: Nicholas LiCausi, GLOBALFOUNDRIES

Bond-Pad Reliability: Studying the Influence of Bond Wire and Mold Compound with Constant Current and Temperature Stress

Contributor: Bernhard Laumer, Infineon Technologies AG

..... 15 MIN AM BREAK

Session 6

10:05– 12:00 am

TVS Metallization (Pheonix Central Ballroom)

Session chairs: Bryan Hendrix & Takayuko Ohba

Spin-Torque MRAM Fundamentals

Invited: Tom Andre, ARM

Metal-to-Metal Interface Cleans for Advanced MOL Interconnects

Contributor: Todd Abrams, GLOBALFOUNDRIES, Inc.

Middle of Line RC Performance and Resistance Optimization Study at 7NM Node

Contributor: Susan Su-Chen Fan, IBM Research Albany NanoTech

Advanced Contact Metallization with Void-Free Cobalt Fill

Contributor: Raymond Hung, Applied Materials

..... LUNCH @ 12:00 in Pheonix South

Session 7

1:30– 3:25 pm

Semiconductor Metallization (Pheonix Central Ballroom)

Session chairs: Greg Herdt & Osamu Nakatsuka

The “interconnect problem” and potential solutions for the end-of-Moore’s law scaling era

Invited: Saurabh Sinha, ARM

Full-band Quantum Mechanical Investigation of the Feasibility of Achieving Specific Contact Resistivity less than $5e-9 \Omega\text{-cm}^2$ in Metal-InxGa1-xAs Contacts

Contributor: Ganesh Hegde, Samsung Semiconductor, Inc.

In Situ investigation of Ni-InGaAs Contacts for Advanced CMOS

Contributor: Seifeddine Zhiou, CEA LETI

Ti Nanoalloyed Ohmi Contacts to p-In0.53Ga0.47 As for III-V Photonics Applications

Contributor: Salma Bensalem, CEA LETI

Diffusion and Redistribution of Phosphorus in Ni-based Silicides

Contributor: Mathilde Lemang, STMicroelectronics

..... 15 MIN PM BREAK

Session 8

3:40– 5:50 pm

BEOL Metal Processes (Pheonix Central Ballroom)

Session chairs: John Ekerdt & Bernhard Laumer

Extending the Cu metallization and Alternatives

Invited: Marleen H. Van Der Veen, Research Scientist IMEC

Cy with Through-Co Self-Forming Barrier vs. Alternative Conductors for 7 nm BEOL and Beyond

Invited: Takeshi Nogami, IBM

Area-Selective Deposition of Ultrathin Nickel Films via Atomic Layer Deposition

Contributor: Himamshu N. Chakravarthula, The University of Texas at Austin

Corrosion Free Copper Metallization with Self Forming MnN Barriers

Contributor: Roey Shaviv, Applied Materials

Evening Reception

7:00–9:00 pm

Best Student Ceremony & Wrap-Up (Magnolia Room)

Enjoy the buffet and drinks! Don't forget to bring your 2 drink tickets.

Austin Buffet Menu:

Field Greens with Bleu Cheese, diced tomatoes, red onions and spicy pecans served with roasted red pepper vinaigrette
Grilled Flat Iron Steak with roasted corn salsa and tomato butter
Rosemary Baked Chicken with chipotle tomato sauce

Thank you Sponsors!



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Leti is a technology research institute at CEA Tech and a recognized global leader in miniaturization technologies enabling smart, energy-efficient and secure solutions. Committed to innovation, its team create differentiating solutions for Leti's industrial partners. By pioneering new technologies, Leti enables innovative applicative solutions that ensure competitiveness in a wide range of markets. Leti tackles critical, current global issues such as the future of industry, clean and safe energies, health and wellness, safety & security... Leti's multidisciplinary teams deliver solid micro and nano technologies expertise, leveraging world-class pre-industrialization facilities. For 50 years, the institute has been building long-term relationships with its industrial partners providing tailor-made solutions and a clear intellectual property policy.