

National  
**Micro**electronics  
Institute



ICCV 2009: 2nd International Conference  
on CMOS Variability

# “Living with Variability”

**Mentor  
Graphics®**



**SYNOPSYS®**



London, 12/13<sup>th</sup> May 2009

# Building and Uniting a Strong Microelectronics Community



## **The Premier Microelectronics Trade Association of the UK and Ireland**

- ❑ Mission to “Strengthen the competitiveness and success of members by catalysing the commercial and technological development of our industry”
- ❑ Innovation is Key: Provides a Path for sustained growth
- ❑ A Particular Focus of Our Work is the “Processes of Innovation”
- ❑ Micro (nano) electronics Industry is Global
- ❑ NMI helps members fit into the Global System ( e.g. Identity, Supply Chain, Global Innovation Networking )
- ❑ NMI Membership of 160 Companies and Organisations spans the Supply and Value chains

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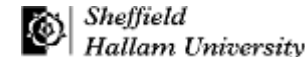
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# 160 Members



# Introducing ICCV09



- We are delighted to open the 2<sup>nd</sup> International Conf on CMOS Variability.
- We are delighted to welcome an exciting array of world experts ( many for the first time ) to share their knowledge and discuss this critical topic of CMOS Variability. We are indeed fortunate to have our own Professor Asen Asenov based in the UK
- Looking back to “ICCV2007” :



**We Increased the awareness of Variability and its impact:**

Only by working in close collaboration, connected and resourced using state-of-the-art e-Science and Grid technology, can we understand and tackle the design complexity of nano-CMOS electronics, securing a competitive advantage for the UK electronics industry”.

*Principal Investigator :*

*Professor Asen Asenov (University of Glasgow)*

# Introducing ICCV09



- ❑ “ICCV2009” : Today we will explore in details the real implications to Design, Technology Development, Manufacturing Processes, Qualification and Reliability !
  - ❑ DAY 1: Understanding Design for Variability ( IDM ,Fabless and Foundry views )
  - ❑ DAY 2: Facing up to Variability ( Focus on EDA Tools and Product Performance )
- ❑ NETWORKING DINNER: Remember you are all very welcome upstairs at 7:00pm this evening!
- ❑ Lets go to the Agenda for DAY 1.....

## NMI Technical Networks Schedule 2009



<b>Date</b>	<b>Event</b>	<b>Location</b>
Feb 5 <sup>th</sup>	Quality & Reliability Technical Network <i>Knowledge-based Testing</i>	South Wales
Feb 26 <sup>th</sup>	Verification Technical Network <i>Low-Power verification</i>	Bristol
Apr 2 <sup>nd</sup>	Analogue/Mixed-Signal/RF Technical Network	Swindon
Apr 22 <sup>nd</sup> *	Packaging Technical Network (partnered)	Cambridge
May 12/13 <sup>th</sup>	2nd NMI International Conference on CMOS Variability <i>Living with Variability</i>	London
June 25 <sup>th</sup>	Embedded network: Multicore systems	Thames Valley
Sep 8/9 <sup>th</sup> *	Power – Low Carbon	Swansea
Sep 24 <sup>th</sup>	System-Level Design Technical Network	Thames Valley
Oct 22 <sup>nd</sup>	Analogue/Mixed-Signal/RF Technical Network	Ireland
Nov 12 <sup>th</sup>	Design for Manufacture Technical Network	Bristol
Nov 5 <sup>th</sup>	NMI AGM and Annual Awards Dinner	London

See NMI Web site for Events Calendar for latest updates, full details, contacts and registration.



## 2<sup>nd</sup> International Conference on CMOS Variability- Agenda Day 1 ( 12<sup>th</sup> May )



### 8:30: Registration and Refreshments

#### Welcome & Introduction

**9:30am**      **Paul Jarvie**, National Microelectronics Institute, "Welcome to ICCV2009"

**9:50am**      Conference Opening Address

### SESSION 1: The IDM & Fabless perspective ( Chair: Sani Nassif )

**10:10am**      **Key Note: Dr Kelin Kuhn** ,Intel, "Variation in 45nm and implications for 32nm and beyond"

**10:55am**      **Coffee Break**

**11:15am**      **Krisztian Flautner**, ARM , "Life on the Treadmill"

**11:45am**      **Professor Asen Asenov**, University of Glasgow , "Statistical variability and reliability in the next generation CMOS technologies and the ITRS response"

### 12:15pm Buffet Lunch & Networking

### SESSION 2: Embracing DfV in the Foundry ( Chair : Kelin Kuhn )

**1:45pm**      **Key Note: Dr Sani Nassif**, IBM, "Variability beyond 45nm: design impact and countermeasures"

**2:30pm**      **Davide Pandini** , ST Microelectronics, "Statistical Static Timing Analysis: A New Approach to Deal with Increased Process Variability in Advanced Nanometer Technologies"

**3:00pm**      **Coffee Break**

**3:20pm**      **Nam Sung Kim**, Chartered Semiconductors , "SRAM Variability: Foundry Perspectives"

**3:50pm**      **PANEL: Are we ready for DfV at sub 32nm ?**

**Chair : Professor Asen Asenov**

### 4:30pm Conference Close ( DAY 1 )

**7:00~10:00pm Conference Dinner : Savoy Place, London, UK , WC2R 0BL**

## 2<sup>nd</sup> International Conference on CMOS Variability- Agenda Day 2 ( 13<sup>th</sup> May )



Registration open ( 8:30am )

### **SESSION 1: ( Chair: Mark Redford )**

The Era of Variability: Are EDA Tools ready ? ( 9:40am )

**Key Note: Jean-Marie Brunet**, Mentor Graphics,

**Andrew Appleby**, NXP Semiconductors

**Dr. Ahsan Bootehsaz** , Synopsys

**Miguel Miranda**, IMEC

### **SESSION 2: ( Chair : Jean-Marie Brunet )**

Delivering Product Performance in the face of Variability

**Sharad Saxena** , PDF Solutions

**Philippe Hurat**, Cadence

**Jeff Watt**, Altera,

**Patrick Drennan**, Solido Design Automation

**PANEL: “If Variability is real: Are we doing enough about it?”**

**Chair: Ian Phillips, ARM**

Conference Close & Wrap up ( 4:15pm )

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