2020 VLSI TECHNOLOGY SYMPOSIUM

VLSI Short Course- 2020

- **2020 Short Course**
  - **NAE Technology- Nirmal Ramaswamy (organizer), Vijay Narayanan (co-organizer)**
  - **NAE Circuits- John Wuu (AMD), Alvin Loke (TSMC)**
  - **JFE Technology- Kazuhiko Endo (AIST)**
  - **JFE Circuits- Noriyuki Miura**
- **Technology Short Course, Circuits Short Course & Joint Short Course**

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Future of Scaling for logic and memory- Tech SC
8 talks; 50 min each- Status 02/27/20

1. **Moore**
   1. **NanoSheet Transistor as a Replacement of FinFET for Future nodes : Device Advantages & Specific Process Elements**
      - ✓ Nicolas Loubet (IBM) – Accepted (Vijay)
   2. **On-die Interconnect challenges and opportunities for future technology nodes**
      - ✓ Mauro Kobrinsky (INTEL)- Accepted (Vijay)
   3. **Looking Back over time: Overcoming the Scaling Challenges in Memory**
      - ✓ Su-Jin Ahn Title: SVP (Senior VP) at Samsung- Accepted (Endo)

      Email: sujin.ahn@samsung.com. She has been leading Flash memory team and also served as IEDM committee member for several years.
   4. **Ferroelectric Hafnium Oxide: From Memory to Emerging Applications'**
      - ✓ Uwe Schroeder (Namlab)- Accepted (Nirmal)
   5. **EUV lithography and its application to logic and memory devices**
      - ✓ Tony Yen (ASML)- **Accepted**
2. More Than Moore
   1. **Emerging technologies for TSV-free monolithic 3DIC**
      - ✓ Dr. Chang-Hong Shen- Research Fellow , Taiwan Semiconductor Research Institute (TSRI) Taiwan- **Accepted (Endo-san, JFE Invited)**
   2. **Insitu BEOL transistors and oxide electronics**
      - ✓ Suman Datta- Accepted (Nirmal)
   3. **Layer transfer technology for heterogeneous integration**
      - ✓ Dr. Tatsuro Maeda, AIST
        e-mail: t-maeda@aist.go.jp- **Accepted** (Endo-san, JFE Invited)

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Joint Circuits & Tech Short Course-
Heterogeneous Integration-To Boldly Go Where No Moore Has Gone Before

Status on 02/07/20.

#	Topic	Contact	Status	Speaker	Title (by Feb. 7)
1	Applications and Opportunities for heterogeneous systems	Alvin Loke	Accepted	Sam Naffziger (AMD)	Chiplet Meets the Real World: Benefits and Limits of Chiplet Designs
2	Front-End (foundry) based 2.5D & 3D solutions & roadmap	Vijay Narayanan	Accepted	Eric Beyne (IMEC)	Heterogeneous System Partitioning and the 3D Interconnect technology Landscape
3	Back-End (OSAT) based 2.5D & 3D solutions & roadmap	Kazuhiko Endo	Accepted	C. Key Chung (ASE)	
4	Heterogeneous Integration for AI	Vijay Narayanan	Accepted	Arvind Kumar & Mukta Farooq (IBM)	Heterogeneous Integration for AI Architectures
5	Sensors & Heterogeneous Integration	Makoto Nagata	Accepted	Marco Del Sarto (ST)	3D packaging: MEMS and sensor point of view
6	I/O Circuits	Alvin Loke	Accepted	Kenny Hsieh (TSMC)	
7	Tools and flows	Alvin Loke	Accepted	Rajesh Gupta (Synopsys)	
8	Design strategies & memory	Makoto Nagata	Accepted	Kichul Chun (Samsung)	