
Dagstuhl Seminar 16062

**Modeling and Analysis of
Semiconductor Supply Chains**

Opening Session

Agenda

- ▷ Workshop Organizers – Introduction and Acknowledgements (Chen-Fu Chien)
- ▷ Workshop Participants – Introduction (Hans Ehm)
- ▷ About the Seminar in General (Lars Mönch)
- ▷ Detailed Workshop Program (Lars Mönch)

Organizers

- ▷ Chen-Fu Chien, Tsinghua Chair Professor, NTHU-TSMC Center for Manufacturing Excellence & STEP Consortium, National Tsing Hua University, Taiwan
- ▷ Hans Ehm, Lead Principal Supply Chain, Head of Supply Chain Innovations, Infineon Technologies AG, Germany
- ▷ John W. Fowler, Motorola Professor and Chair, Arizona State University, USA
- ▷ Lars Mönch, Professor, Chair of Enterprise-Wide Software Systems, University of Hagen, Germany

Workshop Sponsor

Infineon Technologies



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Why are you here?

- ▷ Track record and accomplishment in semiconductor supply chain modeling & analysis R&D and/or practice
- ▷ Desire to see the field advance
- ▷ Opportunity for unique intellectual engagement with peers and colleagues
- ▷ Prospect of new R&D challenges

What are the goals?

- ▷ The major objective of the seminar is related to developing a research agenda for semiconductor supply chain modeling and analysis topics. This agenda should be developed around the following two main topics:
- ▷ **Topic 1:**
 - Novel planning approaches that can deal with the complexity and stochasticity of the semiconductor supply chain.
- ▷ **Topic 2:**
 - Future information systems and supply chain management in the semiconductor industry.

What are the goals?

- ▷ one of the expected outcomes:
 - a (significant) draft of a conceptual reference model for planning and control of a supply chain in the semiconductor industry that can be used for analysis and performance assessment purposes and to foster a common understanding in the research community both in academia and industry.
 - includes specifying reference planning and control activities, the major information flows, and their interaction with a reference system of a physical supply chain.
- ▷ Identify and realize new opportunities for meaningful collaborations

What is the process?

- ▷ Panels with a broader view
 - Presentations
 - Discussions
- ▷ Panels for more specific questions:
 - Presentations
 - Discussions
- ▷ Breakout sessions
 - Collaboration
 - Report out to group
- ▷ Daily synopsis and discussion

Ground Rules

- ▷ We are exploring this space, not erecting monuments
- ▷ We are peers, and can agree to disagree
- ▷ We want to identify the future research problems, not solve them, or decide how they must be solved
- ▷ We want to achieve consensus, but we will include minority opinions

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Workshop Program

▷ Monday, February 8

- 08.30 Convene: introductions, administrative matters, process
- 09.15 Industry Overview (Hans Ehm)
- 10.15 Break
- 10.45 Industry Overview (Kenneth Fordyce)
- 12.00 Lunch & Free Time
- 14.00 Industry Overviews (Chen-Fu Chien, Irfan Ovacik)
- 15.30 Break
- 16.00 Structure of the Domain/Literature Survey (John Fowler, Lars Mönch, Reha Uzsoy)
- 18.00 Dinner

Workshop Program

▷ Tuesday, February 9

- 08.30 Convene: Recap previous day, discuss goals for today
- 08.45 Network Planning/Demand Planning/Capacity Planning (Scott Mason, Chen-Fu Chien, Adar Kalir)
- 10.15 Break
- 10.30 Master Planning/Order Release Planning/ATP (Thomas Ponsignon, Hubert Missbauer, Jose Framinan)
- 12.00 Lunch & Free Time
- 14.00 Global and Local Decisions/Complexity in SCM/Inventory Management (Stephane Dauzere-Peres, Can Sun, Jei-Zheng Wu)
- 15.30 Break
- 16.00 Discussion
- 18.00 Dinner
- 19.30 Cheese & wine reception

Workshop Program

▷ Wednesday, February 10

- 08.30 Convene: Recap previous day, discuss goals for today
- 08.45 Semiconductor Supply Chain Contracts/Supply Chain Coordination via Planning/ Sustainability in SCM (Cathal Heavey, Ton de Kok, Jesus Jimenez)
- 10.15 Break
- 10.30 Simulation Modeling for Supply Chains/(Distributed) Simulation for Semiconductor Manufacturing (Supply Chain) Decision-Making/Agent-based Simulation
(Leon McGinnis, Peter Lendermann, Iris Lorscheid)
- 12.00 Lunch & Free Time
- 14.00 excursion/outing (wine tasting???)

Workshop Program

▷ Thursday, February 9

- 08.30 Convene: Recap previous day, discuss goals for today
- 08.45 Breakout I: What does already exist? What are the future needs? (for different SCM tasks)
- 10.15 Break
- 10.30 Breakout II: Information flows between subsystems
- 12.00 Lunch & Free Time
- 14.00 Breakout III: Information systems involved
- 15.30 Break
- 16.00 Breakout reports and discussion
- 18.00 Dinner

Workshop Program

▷ Friday, February 12

- 08.30 Convene: Recap previous day, discuss goals for today
- 08.45 Panel: Core Elements of a Reference Model for Semiconductor Supply Chains
- 10.15 Break
- 10.30 Wrap Up Session
- 12.00 Adjourn & Lunch

Special Issue

- ▷ International Journal of Production Research (IJPR)
“Modeling and Analysis of Semiconductor Supply Chains”
Guest editors: Lars Mönch, Chen-Fu Chien, Stéphane Dauzère-Pérès, Hans Ehm, John W. Fowler

Important Dates:

- Submission deadline: September 1st, 2016
- Completion of first-round reviews: January 1st, 2017
- Revised papers due: May 1st, 2017
- Target of the second (last) round of reviews: August, 1st, 2017
- Target for sending the accepted manuscripts to the publisher: October 1st, 2017
- <http://explore.tandfonline.com/cfp/est/semiconductor-supply-chains-call>

Summary

- ▷ The organizers have provided the ingredients
- ▷ You are the master chefs who will create the masterpiece
- ▷ Let's get started, and let's have some fun