

**Portland October 16, 2006**

# **Workshop: Electrostatic Issues in Semiconductor Manufacturing**

标准  
Normen  
規格  
Standards  
標準  
立正  
Стандарты

Moderator - Arnold Steinman  
Chief Applied Technologist  
MKS, Ion Systems  
Alameda, California USA  
Leader - SEMI ESD Task Force  
[asteinman@ion.com](mailto:asteinman@ion.com)

**CD with presentations available**



# Agenda

---

- 1:30 – 1:40 WELCOME AND INTRODUCTION – A. STEINMAN
- 1:40 – 2:15 A. STEINMAN (MKS, Ion Systems)  
Overview of Electrostatic Recommendations in Updated E78, E129 and the ITRS 2005
- 2:15 – 2:50 J.A. MONTOYA (Intel Corporation)  
Electrostatic Charge Control Considerations
- 2:50 – 3:20 M. HOGSETT (NOVX) –  
Electrostatic Risk – Decisions Under Uncertainty
- 3:20 – 3:40 QUESTIONS and BREAK
- 3:40 – 4:10 L. LEVIT (MKS, Ion Systems) – Measurement Protocols for  
Quantifying the Effects of Electrostatic Attraction on  
Microcontamination in a Semiconductor Fab
- 4:10 – 4:40 M. NORAS (TREK) – Electrostatic Measurement Issues and  
SEMI E43
- 4:40 – 5:10 V. KRAZ (3M/Credence Technology)  
Electromagnetic Compatibility Issues and SEMI E33
- 5:10 – 5:30 ALL - PANEL

# Thoughts for Today

---

- Physics is the same everywhere. We have no static problems in our factory????
- Denial costs a lot of money.
- As devices become smaller in size, faster in operating speed, and more complex, the static problems will become worse.
- The day we hit a technology barrier in semiconductor production due to static charge is coming closer. HDD and FPD production have already hit this barrier.