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MINI-CONFERENCE

November 2-3, 2023
Albany, New York

PROGRAM



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GlobalFoundries Inc.

400 Stonebreak Road Ext.
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KFPI

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KFPI is a premier semiconductor company specializing in fire and gas safety solutions. KFPI provides fire and gas safety systems including consulting, design, product, installation, integration, certification, training, service, and support. KFPI specializes in performance-based solutions with focus on reliability, uptime, chemical compatibility, and longevity. In addition, KFPI offers compliance guarantees with SEMI S2, FM, & NFPA. KFPI recommends and provides the best gas detection technologies to protect your personnel and operations against hazardous chemical leaks. KFPI developed LCAS - the first and only complete automatic fire safety prevention system for bulk delivery cabinets using pyrophoric chemistries. LCAS safely contains and abates any size leak without fire, particle exposure, or damage to the fab. KFPI is a global leader with offices throughout the USA, Taiwan, Japan, China, Korea, Singapore, & Europe.

Martech Controls

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Schedule-at-a-Glance

Thursday, Nov 2		Room		
8:15 AM – 5:30 PM	Registration	Kelsey's		
10:30 AM – 10:45 AM	BREAK, <i>Sponsored by Centrotherm</i>	Kelsey's		
3:00 PM – 3:15 PM	BREAK, <i>Sponsored by BSI</i>	Kelsey's		
	SESSION 1	Room	SESSION 2	Room
9:00 AM – 12:30 PM	Session 1A: State of PFAS	Kelsey's	Session 2A: Advanced EHS Topics, SEMI S30, Safety Guideline for Use of Energetic Materials in Semiconductor R&D and Manufacturing Processes, Operationalizing and Improving EHS & ESG Performance Through Management System Digitization, Oops, We Did it Again!: Reducing Human Error-Induced Accidents, The Benefits of Using Structured Problem Solving in the Manufacturing and EHS Organization	Chambers
12:30 PM – 1:30 PM	LUNCH	Kelsey's		
1:30 PM – 5:30 PM	Session 1B: IH and Safety Assessments	Kelsey's	Session 2B: Hazard Analysis & Risk Assessment – Concepts and Methodologies	Chambers

Friday, Nov 3		Room		
8:00 AM – 5:30 PM	Registration	Kelsey's		
8:30 AM – 9:00 AM	OPENING: Jim Mulligan	Kelsey's		
	TRACK 1	Room	TRACK 2	Room
9:15 AM – 10:00 AM	Session 1: Implanter Overview and Safety Aspects	Kelsey's	Session 1: Science of the Subfab: Vacuum Pumps	Chambers
10:00 AM – 10:30 AM	Session 2: The Value of Safety	Kelsey's	Session 2: Subfab Dopant Management	Chambers
10:30 AM – 11:00 AM	BREAK, <i>Sponsored by Edwards</i>	Kelsey's		
11:00 AM – 11:50 AM	Session 3: Freeze Frame: What's Wrong With this Picture? A Photographic Audit	Kelsey's	Session 3: Aeris – G: Prepump Abatement for GHG Overview	Chambers
11:50 AM – 1:00 PM	LUNCH, <i>Sponsored by Benchmark Gensuite</i>	Kelsey's		
1:00 PM – 1:30 PM	Session 4: Visual Flame Detection – Semiconductor Applications	Kelsey's	Session 4: Portable Colorimetric Gas Detection (Honeywell High Tech Gas Detection)	Chambers
1:30 PM – 2:00 PM	Session 5: New Vision – Eye Sense technology	Kelsey's	Session 5: Project Pre-Planning	Chambers
2:00 PM – 2:45 PM	Session 6: Robotics in the Semiconductor Industry – Collaborative, Autonomous Mobile	Kelsey's	Session 6: Abatement and CO Reduction	Chambers
2:45 PM – 3:15 PM	BREAK, <i>Sponsored by Wolfspeed</i>	Kelsey's		
3:15 PM – 4:00 PM	Session 7: Testing the Effectiveness of Fire & Gas Detection	Kelsey's	Session 7: Exhaust System Design Strategy	Chambers
4:00 PM – 4:45 PM	Session 8: NFPA 70E Overview and 2024 Update	Kelsey's		

Thursday, November 2, 2023

SESSION 1A

9:00 AM – 12:30 PM, Kelsey's
10:30 AM – 10:45 AM Coffee Break, Kelsey's

State of PFAS

Dave Speed – GlobalFoundries

Abstract – The presentation will provide a summary of the chemistry, physical properties and behavior of poly and perfluoroalkyl substances (PFAS); worldwide regulatory actions, analytical methods, and treatment and removal technology. The presentation will also describe the principal applications in which PFAS are used to manufacture semiconductors, as well as ongoing research efforts to identify viable non-fluorinated alternatives; and develop control technologies.

Bio – David Speed is a Distinguished Member of the Technical Staff at GlobalFoundries. He has a PhD in Environmental Engineering and has spent his entire 30+ year career in the semiconductor industry. He has spent much of his career developing and implementing chemical substitutions, recycling, water and waste treatment, and air emissions control processes. He has also worked in manufacturing and technology development roles. He has published over 20 papers in the peer reviewed literature and holds 4 patents.

SESSION 1B

1:30 PM – 5:30 PM, Kelsey's
3:00 PM – 3:15 PM Coffee Break, Kelsey's

IH and Safety Assessments

Multiple Colden Speakers

Abstract – This course will apply a common framework to planning and implementing safety and industrial hygiene assessments to review fundamentals and discuss best practices, lessons learned, and updates using four assessment types with case study examples. The introduction will present a common management system approach, starting with the importance of planning and establishing the assessment objectives, criteria, and methods, followed by data collection and analysis, reporting and risk communication, and follow-up. This framework will be applied to four topic areas to explore recommended guidelines and best practices, common pitfalls and lessons learned, and key updates for semiconductor and high technology supplier sites on: 1. Fall protection and walking-working surface assessments; 2. Confined space assessments; 3. Industrial hygiene assessments for aerosols and engineered nanomaterials; and 4. Indoor environmental quality assessments.

Bio – Joshua Humlhanz, CSP – Joshua is a Project Manager at Colden Corporation with a dozen years of experience supporting semiconductor and high technology clients on occupational safety, construction safety, industrial hygiene, or EHS management systems services.

Bio – Susan Reynolds, MS, CIH – Susan is a Senior Consultant at Colden with over three decades of industrial hygiene and workplace safety and health compliance and risk management experience, including previous work as a safety and health manager in the semiconductor industry.

Bio – Michele Shepard, PhD, MS, CIH – Michele is a Senior Scientist and Vice President at Colden with thirty years of industrial hygiene and EHS management systems experience, including consulting and research for the semiconductor industry, and previously as an EHS global business lead and EHS manager for high technology R&D sites.

Bio – Clint Smith, MS, CIH, CSP – Clint is a Project Manager at Colden with over a dozen years of experience conducting industrial hygiene exposure assessments, indoor environmental quality investigations, safety compliance reviews, and environmental health evaluations, including for semiconductor and other high technology clients.

SESSION 2A

9:00 AM – 12:30 PM, Chambers

10:30 AM – 10:45 AM Coffee Break, Kelsey's

Advanced EHS Topics

Multiple SESHAs Speakers

SEMI S30, Safety Guideline for Use of Energetic Materials in Semiconductor R&D and Manufacturing Processes

Eric Sklar – Safety Guru, LLC

Abstract – SEMI S30, Safety Guideline for Use of Energetic Materials in Semiconductor R&D and Manufacturing Processes was developed in a multi-year effort among materials and equipment suppliers, users, and external EHS service providers. It differs from many of the SEMI “S” documents in that it includes criteria pertaining to chemical suppliers and users, not just equipment suppliers. Among these criteria is the performance of an “Integrated Risk Assessment”, which calls for consideration, as a whole, of the system in which energetic materials are to be used, not just assessment of each of the components of such a system.

Bio – Eric Sklar, the principal of Safety Guru, LLC, has worked in semiconductor manufacturing and its supporting industries as a device process engineer, a process equipment designer, a chemical manufacturing and facilities engineer, and as a process equipment product safety engineer. He is a member of IEEE Product Safety Engineering Society and SESHAs. He has been active in the SEMI® Standards Program for more than 35 years and currently co-leads the North America EHS Committee Task Forces responsible for energetic materials, exhaust ventilation, fire protection, contaminated equipment, chemical heating, safety labels, and risk assessment.

Operationalizing and Improving EHS & ESG Performance Through Management System Digitization

Benchmark Gensuite

Abstract – Translating internal and external commitments into EHS and ESG performance requires strong connections among corporate objectives, functional processes, and operational teams. This session will provide a brief update on global ESG regulatory and standards activity and associated organizational impacts. This session will also provide insights into best practices for driving critical enterprise-wide engagement, EHS process improvement, and informed decision-making capability. Case studies will feature foundational digitization best practices critical to organizations at any maturity stage while also highlighting practical applications of advanced technologies including AI, computer vision, and connect worker to improve an organization's employee engagement, risk management, and performance capabilities.

Presenters

Donavan Hornsby, Chief Strategy Officer, Benchmark Gensuite

Mansa Manjunath, AVP, Benchmark Gensuite

THURSDAY, NOVEMBER 2, 2023

9:00 AM – 12:30 PM, Chambers

10:30 AM – 10:45 AM Coffee Break, Kelsey's

Oops, We Did it Again!: Reducing Human Error-Induced Accidents

Mike Snyder – Dekra

Abstract – Catastrophic Safety Incidents usually occur after a series of early warning signals are overlooked. Some organizations successfully avoid catastrophic events, even in complex operating environments with high risk factors. Known as Highly Reliable Organizations (HROs), these groups embrace the concept of Human Performance Reliability. This culture shift aids in the detection of and response to early warning signals. For decades, organizations have been trying to reduce human error and unlock the mystery of why good employees make poor decisions, which can result in high-consequence events. New neuroscience research offers methods to implement human factor controls and reduce risk. These approaches can be applied from the boardroom to the shop floor to improve the reliability of operations. Critical organizational elements that address human reliability factors – including work environments, technological interfaces, operating procedures, training, work schedules and leadership actions – are often not aligned with how our brains work, exposing our colleagues to major accident hazards. Using several case studies, this presentation will share a new way of thinking about how to identify and respond to early warning signals, reduce human error, and enable improved decision-making. Ultimately, the approach discussed can be used to guide any organization toward a culture that promotes high reliability thinking and reduces exposure to catastrophic incident potential.

Bio – Michael D. (Mike) Snyder serves as the Vice President, Operational Risk Management for DEKRA Process Safety, a trusted advisor in Chemical Process Safety testing and consulting services. Previously, Mike was the Global Director of Safety and Loss Prevention for Dow Corning Corporation, where he was responsible for leading the company's Occupational and Process Safety programs. He also is a retired Fire Chief and Fire Marshal from the Auburn-Williams Fire District. Currently, Mike serves on the Center for Chemical Process Safety (CCPS) Governance Board and is a former member of the NFPA Standards Council. He serves as a Technical Committee member on NFPA 30 – Flammable and Combustible Liquids Code; NFPA 1 – Fire Code; and NFPA 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments. Mike received his bachelor's degree in Chemical Engineering from Cornell University, and a master's degree in Occupational Safety & Health from Columbia Southern University. He is a registered professional engineer in Michigan, a Certified Safety Professional (CSP), a Certified Fire and Explosion Investigator (CFEI), and a Certified Fire Protection Specialist (CFPS).

The Benefits of Using Structured Problem Solving in the Manufacturing and EHS Organization

Robert Brennen – GF

Abstract – The use of structured problem solving (SPS) methodologies have proven to be instrumental tools in enhancing efficiency, productivity, and safety within the Manufacturing and Environmental, Health, and Safety (EHS) organizations. This presentation explores the advantages accrued from the methodical application of structured problem-solving approaches in these critical domains. Through an in-depth examination of established problem-solving approaches such as Kepner-Tregoe, Lean Six Sigma, PDCA, and others, organizations can streamline processes, reduce waste, increase safety protocol discipline, and improve overall performance. Additionally, structured problem solving facilitates comprehensive effect-cause analysis, leading to the development of robust solutions that address underlying issues rather than treat surface symptoms. Moreover, in the realm of EHS, the integration of structured problem solving ensures the proactive identification and mitigation of risks, thereby fostering a culture of safety and compliance. The presentation contributes valuable insights for industry professionals seeking to optimize their operations and cultivate a culture of continuous improvement. By leveraging structured problem-solving methodologies into their operational frameworks, organizations can not only address immediate challenges but lay the foundation for sustained success and growth in an increasingly competitive landscape including enhanced efficiency, improved compliance, and a safer work environment.

Bio – Robert Brennan enlisted in the U.S. Navy Submarine Force as a nuclear reactor operator. After serving honorably he finished his service as a Quality Assurance Supervisor for the Naval Submarine Support Facility and General Dynamics: Electric Boat, having worked across multiple ship classes and propulsion plants. He then joined the semiconductor manufacturing industry starting at Tokyo Electron America where he was Engineer-in-Charge and Project Manager for the Single Wafer Deposition department. There he installed, maintained, modified, and repaired various engineering machines and processes from reactive ion etching to atomic layer deposition. In 2017 Robert joined GlobalFoundries Fab 8 as the Chief Engineer for the ALD Engineering Team within Single Wafer Diffusion process module. Robert is currently a member of the Business Operations and Strategy Team at Fab 8 and is the site lead for the Fab 8 Central Training Team. He is experienced in structured problem solving and is often found instructing technical training classes and coaching teams through troubleshooting complex equipment.

SESSION 2B

1:30 AM – 5:30 PM, Chambers

3:00 PM – 3:15 PM Coffee Break, Kelsey's

Hazard Analysis & Risk Assessment – Concepts and Methodologies

Brian Desrosiers – ERM

Chris Israni, PE – ERM

Abstract – Semiconductor manufacturing is a hazardous business. Facilities require the use of highly hazardous chemicals to ensure they deliver quality products and be at the forefront of innovation. Although these chemicals have their use, they can also present a significant hazards to our workforce, the environment, and the community if not properly managed. So what can we do to ensure our risks are managed? Well luckily, we have plenty of tools for evaluating these risks based on the complexity of the process. This presentation will cover these various tools at your disposal for hazard identification / risk assessment. The goal will be to familiarize you with the benefits of various methodologies, how do use them, tips for recommendations resulting from these assessments, scoping the risk assessment, and more. Through a robust risk assessment process, we can ensure that recognized risks associated with our process are managed within our risk tolerances. Once you finish the workshop you will feel better equipped for bringing these concepts to your plants.

Bio – Brian Desrosiers, CSP, OHST, CPSA, CCPSC; Partner – Safety, Health, Process Safety; Hartford, Connecticut. Mr. Desrosiers is a Partner in the health and safety / Process Safety Management practice within ERM based in Hartford, CT. Mr. Desrosiers has provided clients with risk management support in various industries including, but not limited to industrial manufacturing, consumer goods, chemical manufacturing, pharmaceuticals, research & development, and power generation. Mr. Desrosiers has experience with qualitative / quantitative industrial hygiene assessments, Process Safety Management, safety management systems, safety leadership & coaching, risk assessments / Process Hazard Analysis, combustible dust, highly hazardous processes, and serious injury / fatality prevention programs. Mr. Desrosiers works with clients to share innovative, technical, and risk-based approaches to compliance, safety, health, and culture in the workplace based on his varied industry experience.

Bio – Chris Israni, P.E.; Associate Technical Partner; Houston, Texas. Mr. Chris Israni is experienced in the areas of process safety management and risk management, compliance with an extensive process and environmental background. He has expertise in various PSM related areas such as process hazard analyses (PHAs) including HAZOPs, HAZIDs and What-ifs, SIL and LOPA, management of change (MOC), pre-startup safety reviews (PSSR), PSM compliance, VPP and NEP audits ,process safety information (PSI) and process safety requirements for the onshore and offshore industries. In addition, Chris also is experienced on the EHS and quality management fronts e in terms of audits and studies including Safe work practices, JSAs, ENVIDs, FMEAs and FMECAs for various sectors.

Friday, November 3, 2023

TRACK 1

9:15 AM – 10:00 AM, Kelsey's

Implanter Overview and Safety Aspects

Steve Roberge – Axcelis Technologies

Abstract – Ion implanters have several inherent hazards associated with their operation and maintenance. Although manufacturers of this equipment include numerous safety features into the design, the potential for serious injury or incident remains, particularly in situations where design safety features are overridden or recommended safe operating procedures are not followed. Although some incidences of equipment malfunction may, on their own, have the potential to result in a safety incident, these occurrences are much more likely to occur during maintenance or service operations where personal interaction with the hazards of the equipment can be much more direct. Ion implanters have five main categories of hazard associated with them. These are hazardous materials, high voltage, radiation (ionizing and non-ionizing), mechanical systems, and ergonomic issues.

Bio – Steven Roberge is the VP of EHS & Facilities at Axcelis Technologies. He is responsible for Facilities and personnel safety at Axcelis worldwide, as well as managing Product Safety issues concerning Ion Implanters. Steve is a SESHSA Fellow and was on the SESHSA Board of Directors and served as President of SESHSA two times. Steve has more than 33 years of EHS experience in the semiconductor industry. Prior to joining Axcelis, he worked in a variety of EHS positions in the specialty chemical, printed circuit board and consulting industries.

10:00 AM – 10:30 AM, Kelsey's

The Value of Safety

Ashley Moll – AMF

Abstract – Evidence supports that building cultures of health and safety provides a competitive advantage in the marketplace, and that a business is only sustainable, when occupational safety is part of the equation. This session will review company case study data and strategies implemented, that support, that by building cultures focusing on the well-being and safety of their workforces, yields greater value for their investors.

Bio – has 17 years of experience in the practice and management of Safety, Industrial Hygiene and Risk Management. Ms. Fernandez is currently the President of AMF Compliance, an Environmental, Health and Safety Consulting Firm. With AMF Compliance she works in a variety of industries such as chemical and plastics manufacturing, semiconductor manufacturing, food and beverage, and with private equity groups. Ms. Fernandez has successfully designed and implemented safety and health management systems which reduced company OSHA incident rates and improved the overall safety culture.

11:00 AM – 11:50 AM, Kelsey's

Freeze Frame: What's Wrong With this Picture? A Photographic Audit

Multiple Colden Speakers

Abstract – This presentation provides a virtual tour through a fictitious workplace, showcasing photographs of actual workplace hazards, safety and health regulatory compliance issues, and environmental health and safety management system considerations. Attendees actively participate in identifying hazards and discussing auditing lines of inquiry, compliance findings, and preventive and corrective action recommendations. This highly interactive session “virtually” explores various safety and environmental health hazards using real-life examples to showcase common and uncommon findings from semiconductor fabrication, high technology suppliers, facilities operations, construction projects, and other settings.

Bio – Susan Reynolds, MS, CIH – Susan is a Senior Consultant at Colden Corporation with over three decades of industrial hygiene and workplace safety and health compliance and risk management experience, including previous work as a safety and health manager in the semiconductor industry.

Bio – Michele Shepard, PhD, MS, CIH – Michele is a Senior Scientist and Vice President at Colden Corporation with thirty years of industrial hygiene and EHS management systems experience, including consulting and research for the semiconductor industry, and previously as an EHS global business lead and EHS manager for high technology R&D sites.

Bio – Joshua Humlhanz, CSP – Joshua is a Project Manager at Colden with a dozen years of experience supporting semiconductor and high technology clients on occupational safety, construction safety, industrial hygiene, or EHS management systems services.

1:00 PM – 1:30 PM, Kelsey's

Visual Flame Detection – Semiconductor Applications

Steve Slavutsky – Draeger

1:30 PM – 2:00 PM, Kelsey's

New Vision – Eye Sense technology

Bob Blessing – DOD Tech.

Abstract – Toxic gas monitoring provides a critical component of the overall life safety at a fab. Most highly toxic gases fall into one of four gas families. Traditional monitoring methods cannot differentiate between two gases in the same family. These typically reliable gas detection systems can be hindered by cross-sensitivities of gases within a family, causing unneeded downtime and shutdowns of equipment. DOD Technologies has developed a new system, the Vision 8, that eliminates costly cross-sensitivity events. The Vision 8 has the ability to speciate gases in the same family, giving the end user the ability to make informed shutdown decisions and avoid false alarms.

Bio – Bob Blessing is the Sales & Marketing Director at DOD Technologies. He has worked at DOD since 2020, and spent the past decade in the high-tech gas detection industry.

2:00 PM – 2:45 PM, Kelsey's

Robotics in the Semiconductor Industry – Collaborative, Autonomous Mobile

Mollie Anderson – BSI

Abstract – Integration of collaborative and mobile robotics into the workspace is occurring across many industries, and at an increasing rate. These robotic systems interact directly with people, and present unique hazards that requires specific knowledge for the Safety Professional. This session will provide a range of tips, trending applications, and best practices for addressing robotics in your facilities.

Bio – Mollie Anderson has over 30 years of proactive and engaged experience providing strategic and tactical health and safety support for high-technology, semiconductor, biopharma, and general manufacturing industry sectors. She is experienced in driving organizational change within globally diverse, fast-paced, and complex process-specific environments.

Ms. Anderson specializes in having comprehensive experience for U.S. and multinational clients building strong relationships with key stakeholders; focused on global, corporate, and sustainable EHS leadership; initiatives, standards, and EHS innovation; and integration of diverse teams driving safety cultures beyond compliance. Applying her product safety engineering, and hazard analysis and risk assessment backgrounds, Ms. Anderson is a lead consultant within BSI and also leads the BSI robotics and automated systems technologies team for EHS program development and risk assessments.

3:15 PM – 4:00 PM, Kelsey's

Testing the Effectiveness of Fire & Gas Detection

Andy Axtman – KFPI

Abstract – Over the past many years Silane has been tested and studied to try to understand characteristics of this complex chemical. The results of these tests have demonstrated that silane, although classified as a pyrophoric gas, can release an automatically catch on fire, release and result in a delayed explosive reaction, or release with no ignition depending upon the leak release rate. With all these varying leak scenarios, what testing has been done to verify the fire and gas detectors used throughout the semiconductor industry will actually detect each and every potential leak scenario? This is exactly what KFPI and ASM set to find out. In this presentation, we will compare what the safety codes and standards require for silane in terms of gas detection, fire detection, and exhaust ventilation and then compare them to what technologies actually responded to leak scenarios of all types under different exhaust rates within silane gas cabinet. Review of the leak testing videos and results will provide some shocking results.

Bio – Andy Axtman is the national sales manager for KFPI LLC. Who specializes in fire & gas safety solutions for the global semiconductor industry with offices throughout the U.S, Asia, & Europe. Andy has worked with a multitude of semiconductor equipment OEM's and end users worldwide in designing and providing fire safety solutions for the past 10+ years. Andy is an active SETHA member and has previously presented regarding the challenges of designing fire suppression systems for Metal Organic chemistries.

4:00 PM – 4:45 PM, Kelsey's

NFPA 70E Overview and 2024 Update

John Van Dyke – Colden

Abstract – This presentation will provide a review of key elements in the NFPA 70E Standard for Electrical Safety in the Workplace® and highlight relevant changes and updates in the 2024 edition.

Bio – John is a consultant at Colden Corporation providing electrical safety and NFPA 70E training and program support. John has decades of experience as an electrical contractor followed by work as an electrical technician at a semiconductor fabrication facility where he was active in developing and providing electrical safety and NFPA 70E training. He also previously served as a fire-fighter and emergency medical technician. John is a Certified Electrical Safety Compliance Professional (CESCP) by the National Fire Protection Association (NFPA)

9:15 AM – 10:00 AM, Chambers

Science of the Subfab: Vacuum Pumps

Matt Kowalski – Edwards

Abstract – Vacuum equipment supporting semiconductor manufacturing plays a vital role in the sustained operation of a clean room. In addition to maintaining the critical process and chamber conditions, these pieces of equipment help ensure the safe transport of the process chemistries and their reaction by-products. Science of the Subfab – Vacuum Pumps provides an overview of basic vacuum science and the considerations that factor into vacuum pump selection. Application challenges, customer preferences and capacity needs add considerable variables to the overall requirements that are needed for the vacuum system; these variables must be considered to ensure the ideal selection of equipment is made.

Bio – Matthew Kowalski is a Technical Program Manager at Edwards Vacuum. Over his 9+ years with Edwards, he has worked within the Applications group in multiple capacities, focusing on equipment specification, evaluation, and sustaining for semiconductor manufacturers and industrial customers. In his current role, he provides internal and external training, contributes to joint development programs, and manages the issuing of information bulletins and reports to document best-known-methods (BKM). He holds a BS in Mechanical Engineering from the University of Massachusetts Amherst and has been working in the semiconductor industry for 12+ years.

10:00 AM – 10:30 AM, Chambers

Subfab Dopant Management

Justin Weinstein – GlobalFoundries

11:00 AM – 11:50 AM, Chambers

Aeris – G: Prepump Abatement for GHG Overview

Jim L'Heureux – Applied Materials

1:00 PM – 1:30 PM, Chambers

Portable Colorimetric Gas Detection (Honeywell High Tech Gas Detection)

Duane Preiss

Abstract – Reliable and accurate portable gas detection: an overview and comparison of available technologies and the benefits of portable colorimetric detection

Bio – Duane Preiss is the Director of Offering Management for Honeywell's High Tech Gas Detection business. He has over 20 years of sales and marketing experience in electronics and electrical components with a primary focus on the semi-conductor and high tech electronics market segments.

He studied Economics at the University of Texas at Austin and has an MBA from the University of Texas' McCombs School of Business.

1:30 PM – 2:00 PM, Chambers

Project Pre-Planning

Dave Hoffman – Riverview

Abstract – Hazardous waste collection systems are subject to a variety of EHS requirements which affect how the system is designed, constructed, and operated. Proper integration of these requirements into each phase of the project will help to minimize the potential impact to project cost, scope, and schedule. Failure to properly integrate EHS requirements into the design, construction, commissioning/testing, and operation phases of a hazardous waste installation/modification/demolition project can negatively impact project cost, scope, and schedule. Revising project design after completion, implementing change orders during construction, incorrectly commissioning/testing, and failing to account for all operational requirements can all lead to cost and schedule overruns. Using lessons learned from multiple hazardous waste collection system projects, we will discuss how to optimize integration of EHS requirements into each project phase. Correct integration of EHS requirements into each phase of the project means that the impacts are properly built into the scope, schedule, and cost of the project, minimizing the potential for unanticipated changes.

Bio – Mr. Hoffman has a BS in Aerospace Engineering from the University of Michigan, an MS in Mechanical Engineering from the University of Florida and an MS in Civil Engineering from Florida Atlantic University. Mr. Hoffman has over 30 years of engineering experience and has worked in environmental compliance both for industry and as a consultant. Mr. Hoffman is currently the owner of Riverview Engineering and has been associated with GlobalFoundries Fab 8 since startup in 2010.

2:00 PM – 2:45 PM, Chambers

Abatement and CO Reduction

Adam Stover – Centrotherm

Abstract – Sustainability of semiconductor manufacturing is increasingly important in our world of depleting resources and increasing environmental and political challenges. The talk will focus on how activation of basic operating modes using fab control and interfacing software can synchronize subfab operation to process demands and minimize both resource consumption and cost-of-ownership with zero impact to process performance and subfab emissions. Interfacing between fab operations and subfab equipment (dry pumps, POU abatement, chillers, heat trace) allows for process-specific control of resources, including fuel, water, power, N₂, and O₂. Abatement configuration to support idle and sleep mode for compliance with SEMI standards will be discussed. In addition, software reporting can chart and quantify savings emissions reduction of greenhouse gases based on IPCC default emissions and abatement DRE factors by year, by fab, or by process. Furthermore, carbon footprint of the subfab can be minimized in this fashion without reducing destructive removal efficiency (DRE). An in-depth analysis is performed to understand the interplay of abatement input fuel carbon footprint vs. overall tool carbon footprint from perfluorinated carbon gases, such as CF₄ and NF₃.

Additionally, a look at fresh water usage for acid dilution is investigated to further discuss abatement environmental footprint. An analysis is performed regarding dilution versus neutralization to understand in which applications water and cost savings are most likely to be yielded.

Bio – Dr. Stover is currently the Chief Technology Officer and Vice President Applications at centrotherm Clean Solutions, based out of Albany NY. He has almost a decade of experience in the semiconductor subfab, particularly around gas abatement. Before his 5 year tenure at centrotherm, he worked at Edwards Vacuum for 4 years, first as an applications engineer and then as applications manager. He also has process engineering experience at Special Metals in New Hartford, NY. Dr. Stover has a BS in chemistry from Haverford College and a PhD from The Johns Hopkins University in materials science, specifically in thin film metallurgy.

3:15 PM – 4:00 PM, Chambers

Exhaust System Design Strategy

Bitner/Perez – HIS