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Secondary Equipment and Application (SEA)

P. Connock
Chairman
memsstar Ltd, Livingston, United Kingdom

memsstar

Biography

Peter Connock
PENTA Director, AENEAS
Board Chairman, memsstar Limited

Biography

Peter Connock has been working in the semiconductor industry for 40 years with a wide range of responsibilities in development, customer service, marketing and management. He has held long-term positions at Edwards, Applied Materials and memsstar in locations around the world. In his latest role, PENTA Director at AENEAS, he is responsible for the management of the EUREKA cluster PENTA - focussed on catalysing activity in the micro and nanoelectronics enabled systems and applications sector in Europe. PENTA will operate for 5 years, and launched its first call in January 2016.

This complements his Board Chairmanship of memsstar, Europe's premier semiconductor equipment remanufacturer and services provider. It also serves the global MEMS marketplace, offering etch and deposition expertise, experience, proprietary and remanufactured systems and know-how to deliver innovative products and services for research, commercial R&D and production.

He has further augmented his operational activities by establishing a long-term relationship with industry representative bodies such as SEMI serving on SEMICON, ISS and now the Secondary Equipment committees in Europe for many years. These activities are complemented by his appointment to the nmi Board in the UK - representing the UK microelectronics industry .

Peter also specialises in working with SME's at Board level in strategic marketing and business development.

Linked In: <https://www.linkedin.com/in/dsmcpc>

Secondary Equipment - Challenges & Opportunities



P. Connock
Chairman
memsstar Ltd, Livingston, United Kingdom



Abstract

Far from being a mechanism for manufacturing “old” products, the use of so called “secondary” equipment has become a mainstream mechanism for cost effective production of an important range of products. It is well known that 200mm production capacity is expanding rapidly, and the re-use and re-purposing of older equipment is fuelling a lot of that growth.

However, there are issues to be faced: availability of suitable tools, part obsolescence and shortage of engineer skills to name but a few. OEM’s are trying to address this through the production of “new” 200mm equipment but there is a difficult balance to be reached in terms of cost of production of certain types of devices.

The presentation will discuss these issues as an introduction to the subjects that will be covered in the rest of the SEA session.

Biografie

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More than Moore market trends and new investments: what can we expect for the next 5 years ?



J.-C. Eloy
President & CEO
Yole Développement, VILLEURBANNE, France



Abstract

More than Moore applications (including sensors, power devices, Led, CMOS image sensors, microfluidics and printed electronics) are expected to reach more than \$100B in 2022, with a CAGR above 12%, reaching more than $\frac{1}{4}$ of the total semiconductor market at that time... So More than Moore is becoming a key industry, with its own process, equipment, roadmaps... A significant part of this industry is manufacturing on 8" (even for some of the players on 6" wafers), using both new equipment but also a lot of refurbished equipment. It is revitalizing both the 8" equipment market (compared to the leading edge 300mm equipment market) but also the second hand equipment (a large majority of this new manufacturing line are using such equipment).

The presentation will deep dive into the trends in terms of new manufacturing lines, technical roadmaps and what is expected in terms of changes for the next 5 years, based on Yole Développement analysis and reports.

Biografie

Jean-Christophe Eloy is CEO and Founder of Yole Développement, the "More than Moore" market research and strategy consulting company. Since 1991, he has been involved in the analysis of the evolution of MEMS markets at device, equipment and also materials suppliers' level. Jean-Christophe Eloy is also board member in several organisations in Europe and in North America.

Leveraging 300 mm Technology Solutions to Enable New Process Capabilities for MEMS



E. Patton
VP/GM Reliant Systems
Lam Research Corporation, Customer Support
Business Group, Fremont, United States



Abstract

The Internet of Things (IoT) is driving a wide range of devices. MEMS sensors and transducers are critical components in the IoT infrastructure. As this infrastructure proliferates, it will continue to drive demand for increasingly advanced yet cost-effective sensor and transducer technologies. To satisfy this demand, the requirement for semiconductor processing equipment that enhances the customers' fab productivity and capital efficiency is also growing.

Lam Research has been working to extend our product lifecycle through technology enhancements and productivity upgrades to our etch, deposition, and clean technologies to ensure we meet the needs of the MEMS and sensor manufacturing community. While the critical dimensions of MEMS devices are significantly larger than leading edge ICs, the profile, tilt, film quality, materials, and surface roughness requirements are comparable. Applying the technical leadership from fabricating the most advanced devices to MEMS processing equipment is enabling a new level of control for MEMS fabrication. These developments not only focus on our deep silicon etch technology, which is already an established process used in the fabrication of MEMS devices, but also on the processing of new materials that are key to the next generation of MEMS and NEMS.

In parallel, through a process of continuing innovation, we are consistently introducing our own suite of smart manufacturing tools that allow these process solutions to be deployed with improved operational efficiency and productivity.

In this presentation, we will review the enhanced technical capability of etch, deposition, and clean processing equipment, as well as the smart manufacturing tools that can increase the capability and productivity of IoT device fabrication equipment.

Biografie

Evan Patton is the VP/GM of Reliant Systems in Lam Research's Customer Support Business Group. He has a broad background in semiconductor process and product development, including developing the SABRE electrochemical deposition system. Evan has over 30 process and hardware patents, and has published several conference and journal papers. He has experience with metallization, CVD, RTP, device integration, III-V development, packaging operations, and etch. He graduated with honors with a BS in metallurgical engineering from Purdue University.

ASML extends the lifetime of the PAS platform to serve the needs of the 200mm IOT industry



R. van Aken
Head of Products & Services - ASML Mature
Business Line
ASML, Business Line Mature Products, Veldhoven,
Netherlands

The ASML logo, consisting of the letters 'ASML' in a bold, blue, sans-serif font. The 'A' and 'S' are connected, and the 'M' and 'L' are also connected.

Abstract

The lifetime of the PAS 5500 platform will be extended with another 8 years to the 2030 to serve the needs of our customers in the IOT industry to maintain & extend their 200 mm factories in the most cost-effective way.

An extensive program has been set-up to re-design parts, modules & racks of the PAS systems to be able to continue refurbishment and service activities until 2030. This includes as well a major new initiative to extend & adapt the service portfolio to the current & future needs of our customers and to add new productivity and overlay options to our product roadmap, including mid-life upgrades.

Biografie

Rik van Aken is Head of the Products & Services department within the ASML Business Unit Mature Products. He is responsible for product management and marketing activities for the systems, options and services portfolio. Rik has an extensive experience in product management, marketing and business development in multiple industries including Semiconductor, Automotive and Telecoms. He graduated as electrical engineer from the Eindhoven University of Technology and completed an MBA degree at Webster University.

The secondary equipment market - a view from ST



G. Bignell
Director, Front End Equipment Purchasing
STMicroelectronics, GPO, Crolles, France



Abstract

The secondary equipment market has never been more buoyant.

This year sees yet again growth in equipment needs for all wafer sizes.

More capacity coming on line and more innovation to satisfy the growing markets in IOT, smart phones and automotive.

The vast majority of devices made for these applications are not made on 300mm wafers.

200mm manufacturing continues to be the dominant force for trailing edge Silicon, with 150mm and below for other substrates includes SiC.

STMicroelectronics, with our efficient lean FE manufacturing sites in Europe and Singapore, combined with our wealth of intellectual property and R&D talent is uniquely positioned to successfully serve these very demanding customers.

One of the challenges we face is how to effectively source and maintain high quality, often previously used, 200mm equipment.

In this presentation we will share ST's experiences in sourcing equipment and services, how we see the future shaping up and how we think the different stake holders could help us improve further.

Biografie

Biography.

Gareth Bignell Front End Equipment Purchasing Director, STMicroelectronics

Gareth Bignell has been responsible for the sourcing of ST's fab equipment for all ST sites worldwide as well as maintenance cost reduction programs for the last 9 years. Prior to this, he was the equipment selection program manager for the Crolles2 Alliance where he closely worked with Freescale and NXP on sourcing all of the 300mm tools for this successful multi-company alliance. He started his career as an equipment engineer in Inmos UK before holding various engineering and management roles at ST's Agrate and Crolles sites. Gareth has worked in the semiconductor industry for more than 30 years since graduating from the University of Wales, Newport.