

TECHCET

Electronics Materials Information



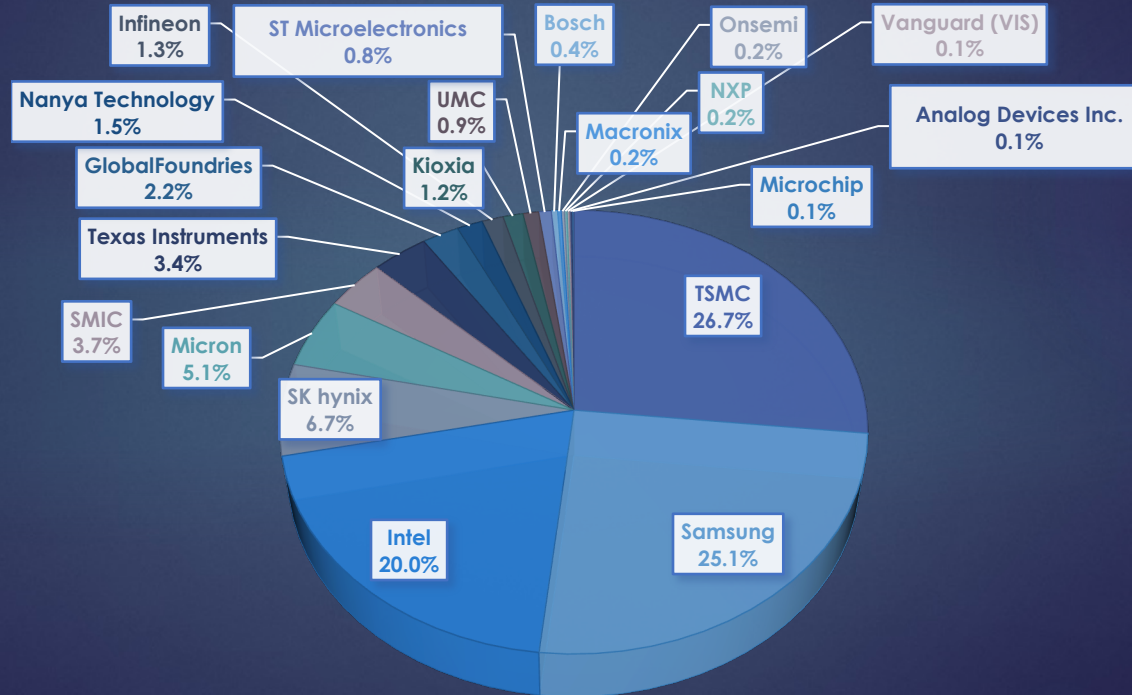
TECHCET Market Outlook February 2024

LITA SHON-ROY
PRESIDENT/CEO

SIA WEBINAR 2/22/2024

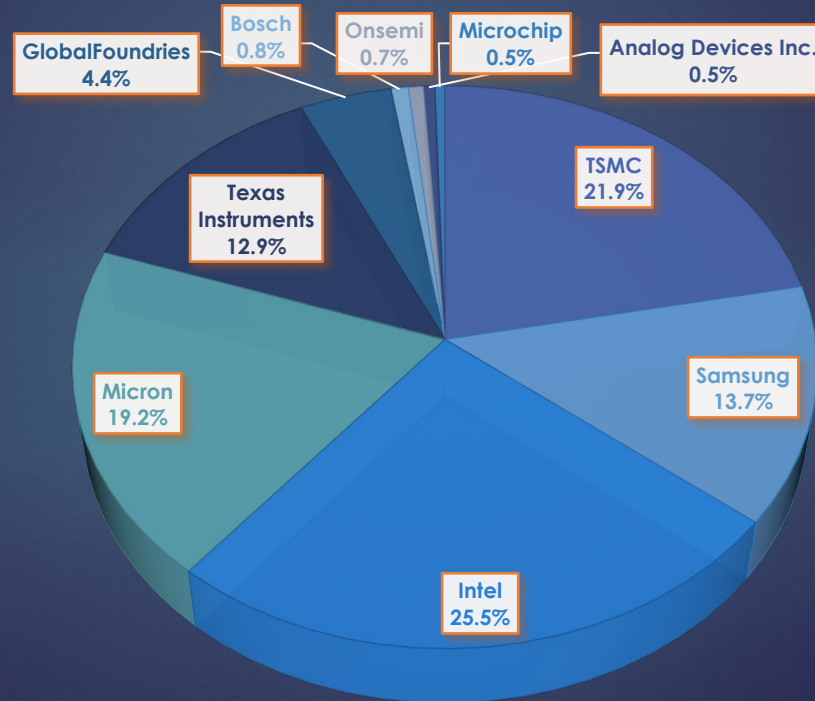
WW FAB EXPANSIONS (CURRENTLY ANNOUNCED)

2022-2027 WORLDWIDE FAB EXPANSION (\$685 B)



US FAB EXPANSIONS (CURRENTLY ANNOUNCED)

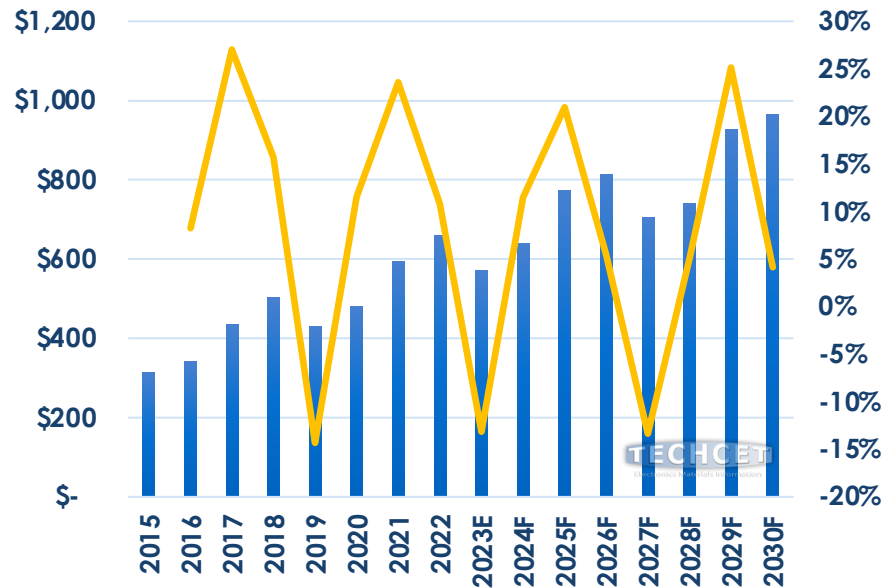
2022-2027 US FAB EXPANSION (\$185 B)



SEMICONDUCTOR REVENUE FORECAST

- After slumping by more than -13% Y-o-Y in 2023, the industry is poised to post consecutive years of double-digit sequential growth:
 - Expected to be largely driven by recovering memory ASPs in 2024, total semi revenue up +11.5% versus 2023 - industrial and automotive segments look to be cooling.
 - 2025 is expected to represent peak growth of the upturn (+21% versus 2024) with moderating growth in 2026 (+5.5% versus 2025).
- Prior to the close of the decade, TECHCET projects a milestone of > USD \$900B.

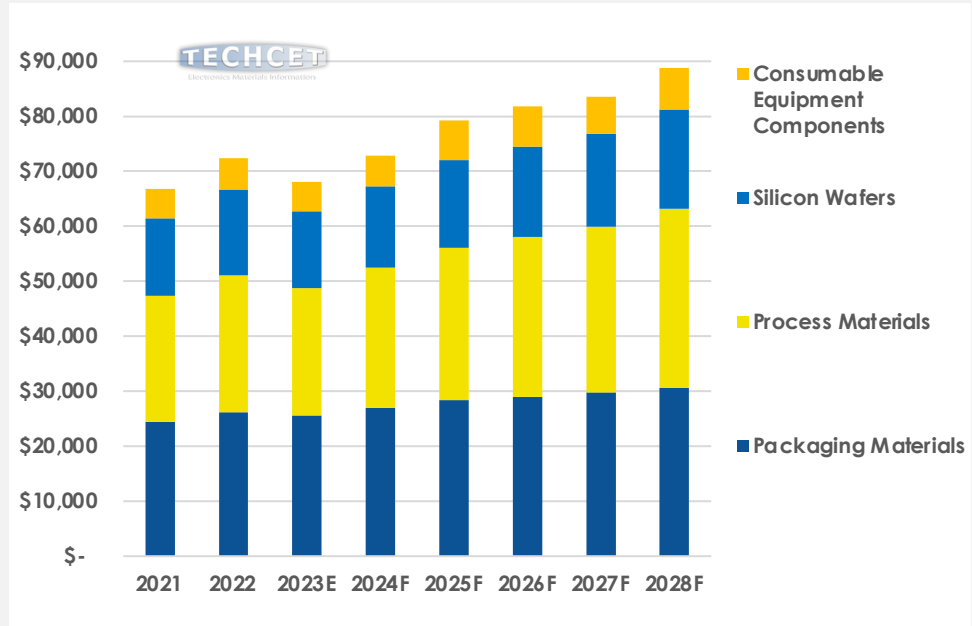
Semiconductor Revenue Forecast (\$B, USD)



SEMICONDUCTOR MATERIALS FORECAST

- TECHCET estimates that 2023 experienced a sequential decline of -6%:
 - Silicon wafers experienced the largest retreat, falling by -11%.
 - Other segments saw decreases of low- to upper-single-digits.
- While 2024 and 2025 indicate improving recovery with respective sequential growths of +7.1% and +8.8%, 2026 and 2027 are expected to moderate (low single-digit growths), prior to a stronger performance in 2028.

Semiconductor Materials Forecast (\$M, USD)



RECENT SUPPLIER EXPANSION EXAMPLES

Company	Product Area	Spending/Investment
Fujifilm	Cleaners, polyimides, developers, and solvents	<ul style="list-style-type: none"> Investment of €30 million in Belgium, target completion by the end of 2024
STMicroelectronics/Catania, Italy	150mm SiC epitaxial substrates	<ul style="list-style-type: none"> €730 million investment, supported financially by the government of Italy
Fujifilm	CMP slurries	<ul style="list-style-type: none"> 2 billion-yen investment, plant location is in Kumamoto, Japan with full-scale production anticipated in Jan 2024
Soitec	300mm SOI wafers	<ul style="list-style-type: none"> €400 million investment in a Singapore facility with projected completion in 2024
Merck	Specialty gases and materials for thin film and photolithography	<ul style="list-style-type: none"> €500 million investment in Taiwan over the next four to six years with initial operations in 2025
Ucore Rare Metals Inc.	Rare earth element processing	<ul style="list-style-type: none"> Acquired a site in Louisiana for the development of its first commercial rare earth element (REE) processing facility, with a goal of production by early 2025.
VVC Resources	Helium and natural gas	<ul style="list-style-type: none"> Located in Syracuse, Kansas, six additional wells are expected to be completed by the end of 2023

TEHCET's OUTLOOK SUMMARY

- The global economy has reached a period of slowing growth.
- Current geopolitical risks pose a further downside.
- The semiconductor industry, after facing a cooling off in 2022 and a deepening downturn in 2023, is entering an upturn, though it is off to a slow start in 2024 (many companies providing negative sequential revenue guidance).
- Additionally, several delays in US semiconductor fab expansions have recently been announced (next presentation topic will address).
- And while certain inventory corrections are expected to persist through 1H, 2024 is poised to reach double-digit revenue growth, primarily on strengthening memory ASPs and a broader recovery, particularly in 2H.
- Peak growth for the upturn is expected in 2025 for all semiconductor outlook categories:
 - Overall materials growth is expected to remain positive through 2028, as technology advancements drive expanded demand across most segments.

Thank you!

For more information, please contact us at

cmcinfo@techcet.com

<https://techcet.com>

+1-480-382-8336, x1