

THE ELECTRONIC MATERIALS REPORTER

FOURTH QUARTER • FEBRUARY 2020



- This is the Q4 2019 issue of Prismark's **Electronic Materials Reporter (EMR)**. This issue provides initial estimates for full-year 2019 and 2020, and focuses on a review of several materials segments: semiconductor wafer fabrication materials, display fabrication materials, photovoltaics materials, and materials used in the fabrication of other components.
 - Semiconductor **wafer fabrication materials** declined 2.5% to \$27Bn in 2019, following 14% growth in 2018. This trend reversal is due to underlying unit demand decline and a stabilization of blank wafer substrate prices. Prismark's growth outlook stands at 3.3% CAAGR 2018-2023.
 - The **display materials** market was essentially flat in 2019 at \$34Bn, with price erosion offsetting area growth. The 2018-2023 growth outlook stands at 1.5% CAAGR. The gradual transition to OLED technology remains the most significant trend.
 - **PV materials** dropped sharply in 2018 due to an incentive policy adjustment. 2019 saw another, though more moderate, decline by 3% to \$20Bn. Given the lower 2018 baseline, the five-year mid-term outlook has increased to 2.9% CAAGR. The long-term outlook remains positive.
 - "**Other components**" are defined by exclusion and include passives, connectors, non-semiconductor sensors, data storage, thermal, and other components. This materials segment reached \$11.6Bn in 2018 and declined slightly in 2019. The five-year outlook is for 2.3% CAAGR.

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THIRD QUARTER • NOVEMBER 2019



- This issue of the *Electronic Materials Reporter* surveys the leading electronic materials suppliers.
- We profile forty-two companies that generated at least \$1Bn in electronic materials sales during calendar year 2018. The electronic materials business of the largest supplier (Shin-Etsu) exceeded \$4Bn by Prismark's definitions. In total, the group of leading suppliers in the \$1Bn club generated some \$80Bn in electronic materials sales during the year.
- The display and PV markets drove the creation of large materials businesses over the past decade. The fast-growing batteries market is now taking over this role, with several new entries to our list of leading suppliers in this market.
- Japanese-headquartered companies continue to dominate the leading suppliers list, representing almost half the list both by number and by revenue. However, their share has declined slightly from the previous year.
- The electronic materials market as a whole remains fragmented, but has become slightly more concentrated. The leading suppliers as defined here represent some 52% of the total electronic materials market.
- In contrast, many individual market segments are highly concentrated. This applies especially to large segments with high customer concentration, where the need for access to financial and technology resources creates barriers to entry.

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SECOND QUARTER • AUGUST 2019



- This is the Q2 2019 issue of Prismark's **Electronic Materials Reporter (EMR)**. This issue reviews year-to-date market developments, highlights the fastest-growing electronic materials segments, and focuses on a review of several materials segments: semiconductor packaging, interconnect materials, battery materials, and board-level and systems-level assembly materials.
- Prismark has **revised downward the electronic materials forecast for 2019** to account for semiconductor market conditions and several other trends. We now expect an essentially flat materials market at -0.2% for 2019 over 2018.
- **High-growth opportunities** remain available despite the modest overall electronic materials market outlook. More than twenty materials are expected to offer growth rates of at least 5% CAAGR from 2018 to 2023.
- The **semiconductor packaging** materials segment can be divided into a relatively stagnant legacy segment and a faster-growing advanced packaging segment. While pockets of fast growth exist, the segment as a whole remains weak at 0.7% CAAGR expected from 2018 to 2023.
- The **interconnect materials** segment outlook broadly follows systems growth, with 3.5% CAAGR expected until 2023. High-speed and RF laminates are expected to offer the highest growth at about 6% CAAGR.
- The **battery materials** segment is the fastest-growing segment of the electronic materials market, with materials for lithium-ion batteries expected to grow at over 13% CAAGR.
- **PCB and systems assembly materials** are expected to grow at not quite 2% CAAGR, held back by the segment's dependence on a number of quasi-commoditized materials.

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FIRST QUARTER • MAY 2019



- This is the Q1 2019 issue of Prismark's ***Electronic Materials Reporter (EMR)***. This issue is focused on the review and forecast of the electronic materials market, segmented by application space.
- The electronic materials market grew 3.3% in 2018 over 2017, reaching a new record high of \$151Bn. Stellar growth in battery materials and wafer fab materials was offset by a drastic contraction in photovoltaic materials.
- Commodity pricing fluctuations had little effect on the electronic materials market in 2018. Currency exchange rate fluctuations are estimated to have added around 0.5%.
- From an application segment perspective, the battery materials segment showed the strongest growth in 2018, with 30% growth over 2017. Wafer fab materials also did very well at 14% growth. PV materials contracted by -17%.
- Prismark expects 2.0% electronic materials market growth for 2019, held back by the overall slower growth in the broader electronics industry. Excluding battery materials, the growth outlook drops to 0.4%.
- The mid-term outlook for the electronic materials market remains optimistic at 4.2% CAAGR 2018 – 2023. However, about half of the expected growth in absolute terms is due to the battery materials segment. Excluding this segment, growth would be limited to 2.6% CAAGR.
- There are options to boost growth, even for suppliers whose end markets are expected to grow at only GDP rates or less. This includes taking market share through innovation and focused commercial efforts, finding new applications for existing technologies, and consolidation through acquisition.



CONSULTANTS TO THE ELECTRONICS INDUSTRY
BUSINESS OPPORTUNITIES FROM TECHNOLOGY AND
MARKET CHANGES

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