LYON, France – December 13, 2018: According to the market research and strategy consulting company, Yole Développement (Yole), the polymeric materials market revenue will double over the next five years. Driven by movements towards further miniaturization and higher functionalities, megatrend applications like AI\(^1\), 5G, and AR/VR\(^2\) are creating huge business opportunities. Therefore, the megatrends are directly contributing to the growth of advanced packaging industry, showing an impressive 7% CAGR\(^3\) to reach US$39 billion in 2023\(^4\). Today, megatrend applications are fueling the next generation of advanced packaging platforms including high-density FOWLP, 3D stacked TSV memory, WLCSP, and flip-chip…

In its new report, *Polymeric Materials for Advanced Packaging at the Wafer Level*, Yole presents 2017 – 2023 market figures and dynamics of the market, per packaging platforms integrating polymeric materials. It includes a comprehensive analysis of the existing polymeric materials used for each advanced packaging process step, along with their status. Also presented is the maturity level of each polymeric material, by advanced packaging function and a detailed technology roadmap.

The Semiconductor & Software team from Yole offers you today a deep analysis of the massive adoption of polymeric materials by the advanced packaging industry.

“The innovative advanced packaging platforms have reached a new level of complexity and now demand higher integration-level requirements,” asserts Amandine Pizzagalli, Technology & Market Analyst, Semiconductor Manufacturing at Yole. “These lofty standards will strongly influence the increasing demand for advanced materials with new technical specifications, in order to achieve better performance.”

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\(^{1}\) AI: Artificial Intelligence  
\(^{2}\) AR/VR: Augmented Reality/Virtual Reality  
\(^{3}\) CAGR: Compound Annual Growth Rate  
\(^{4}\) Source: *Status of the Advanced Packaging Industry report*, Yole Développement, 2018
With respect to materials, polymeric materials are already being applied in large-volume manufacturing in some advanced packaging process steps. Today, they have already found integration in major process steps: RDL, bump/UBM, TSV, and assembly levels, as well as at the bonding interface.

Yole identified a wide variety of polymeric materials available to packaging manufacturers: PI, PBO, BCB, epoxies, siloxanes, and acrylic, all of which are defined by their constant dielectric, cure temperature, stress, etc. Polymeric materials present excellent electrical, chemical, and mechanical properties: they could offer better performance than any other type of materials… According to Yole’s report, materials will increasingly be implemented when adopting additional functionalities in the same field.

The polymeric materials market generated revenue in excess of US$700 million in 2018. It is expected to peak at about US$1,3 billion by 2023 with a 12% CAGR depending on the material type over this period. The market is driven by the dielectric material segment, analyzes Yole’s team in its report. Polymeric materials growth will find support mostly from the expansion of dielectric material for more complex devices, followed by the broad introduction of polymeric temporary bonding material. The latter will be accelerated by the ramp-up of 3D stacked TSV\(^5\) in DRAM memory applications…

A detailed description of this report is available on i-micronews.com, manufacturing reports section.

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\(^5\) TSV: Through-Silicon Vias
ABOUT THE REPORT:

Polymeric Materials for Advanced Packaging at the Wafer-Level

Polymeric materials market revenue will double over the next five years. – Produced by Yole Développement (Yole).

Companies cited in the report:


Author:

Amandine Pizzagalli is a Technology & Market Analyst in Equipment & Materials - Semiconductor Manufacturing, at Yole Développement (Yole). Amandine is part of the development of the Semiconductor & Software division of Yole with the production of reports and custom consulting projects. She is in charge of comprehensive analyses focused on semiconductor equipment, materials and manufacturing processes. Previously, Amandine worked as Process engineer on CVD and ALD processes for semiconductor applications at Air Liquide. Amandine was based in Japan during one year to manage these projects. Amandine graduated from CPE Lyon (France), with a technical expertise in Semiconductor & Nano-Electronics and has a master focused on Semiconductor Manufacturing Technology, from KTH Royal Institute of Technology (Sweden). She has spoken in numerous international conferences and has authored or coauthored more than 10 papers

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Founded in 1998, Yole Développement (Yole) has grown to become a group of companies providing marketing, technology and strategy consulting, media and corporate finance services, reverse engineering and reverse costing services and well as IP and patent analysis. With a strong focus on emerging applications using silicon and/or micro manufacturing, the Yole group of companies has expanded to include more than 80 collaborators worldwide covering MEMS & Sensors - Imaging - Medical Technologies - Compound Semiconductors - RF Electronics - Solid State Lighting - Displays - Photonics - Power Electronics - Batteries & Energy Management - Advanced Packaging - Semiconductor Manufacturing - Software & Computing - Memory and more...

The “More than Moore” market research, technology and strategy consulting company Yole Développement, along with its partners System Plus Consulting, PISEO and KnowMade, support industrial companies, investors and R&D organizations worldwide to help them understand markets and follow technology trends to grow their business. For more information, visit www.yole.fr and follow Yole on LinkedIn and Twitter.

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