Abrasives Market Outlook Series: Technological Advances in Additive Manufacturing

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NEW YORK, NY, UNITED STATES, September 23, 2024 / EINPresswire.com/ -- Dedalus Consulting (www.dedalusconsulting.com) has recently updated Abrasives, Superabrasives & Abrasive Products–Global Markets, End-Users, Applications & Competitors: Analysis & Forecasts, the 10th edition of Dedalus' in-depth research on the global abrasives industry, covering the market over the next five years.

According to Dedalus Consulting, the global abrasives market will surpass $21.0 billion in 2024 across all markets.

In this series, we are looking at the latest trends, technological advancements, and strategic growth opportunities shaping the abrasives market through 2029. This installment focuses on current trends, in particular the technological advances in additive manufacturing (AM).

The abrasives and machining industry at large is witnessing a significant shift with the growing adoption of additive manufacturing (AM). With its ability to enhance customization, streamline production, and reduce costs, AM is set to further revolutionize the future of tool manufacturing.

Transforming Abrasive Tool Production

Traditionally, producing abrasive tools like grinding wheels and cutting discs involved subtractive processes—resulting in material waste, time-consuming setups, and limitations on design flexibility. With AM, the approach shifts to precision layering, where material is deposited only

where needed. This drastically reduces raw material waste, lowering costs, particularly when working with costly superabrasives.

Additionally, AM eliminates the need for high-cost tooling and molds. The ability to quickly move from design to production without retooling cuts down on upfront capital investment and simplifies workflows, providing a more efficient and cost-effective way to meet industry demands.

Advanced Customization and Efficiency

AM opens up opportunities to create customized, high-precision abrasive tools tailored to specific needs. Companies like Sandvik and Kennametal are using AM to deliver abrasive solutions with advanced geometries, cooling channels, and material compositions that weren't possible with traditional manufacturing.

These design optimizations translate into tools with better heat dissipation, longer lifespans, and more consistent performance in demanding applications, whether in aerospace, automotive, or advanced manufacturing sectors. Higher productivity, reduced tool wear, and ultimately, lower operational costs are the result.

Cost Reduction and Sustainability

AM minimizes material waste, driving significant cost savings. It also reduces labor and production steps through automation, and enables rapid prototyping, speeding up product development and time-to-market. Additionally, on-demand manufacturing reduces inventory and warehousing costs, further lowering expenses.

From a sustainability standpoint, AM cuts material waste, reduces energy consumption, and allows for localized production, making it both cost-effective and environmentally friendly.

Future Outlook

While the advantages of AM are clear, challenges remain, particularly regarding the durability of some 3D-printed materials in high-wear applications. However, continued investments in R&D are addressing these issues, and the technology is expected to become even more accessible and cost-effective in the coming years.

Additive manufacturing is transforming the abrasives industry by enabling customized, efficient, and cost-effective production. Through reduced material waste, lower tooling costs, and faster prototyping, AM is changing the landscape of tool manufacturing and leading the industry into the future.

In our next newsletter, we'll investigate how AI and automation are reshaping production lines,

enhancing efficiency, and reducing labor costs.

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* navigate to the report page: Abrasives 2024;
* learn more about our Ulysses Data Subscription Service (USS), which covers the market through 2040;
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* call us at (212) 709-8352.

About Dedalus Consulting
Dedalus Consulting is a privately owned and independently operated market research publisher and consultancy.

Our research focuses on both emerging and mature markets in high-technology sectors, including tooling and machining, advanced materials, frequency control and timing, surge and circuit protection, energy and renewables, life sciences, and next generation computing. Research is continually updated through a methodology that is based on primary interviews with market participants, including manufacturers, end-users, research institutions, distribution channel representatives and service providers.

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