

**See Beyond
the Horizon**

Linx Consulting Inc.

SPECIALTY ABRASIVES FOR CMP, 2017

Fourth Edition

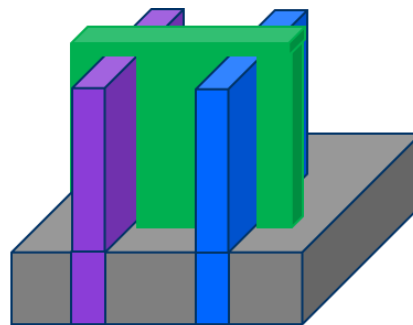
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***Uncertainty around
true materials
requirements is a
huge risk for leading
edge materials
developers.***

- ◆ Copper
- ◆ Barrier
- ◆ Oxide
- ◆ Tungsten
- ◆ STI
- ◆ Emerging
- ◆ Wafer Polishing

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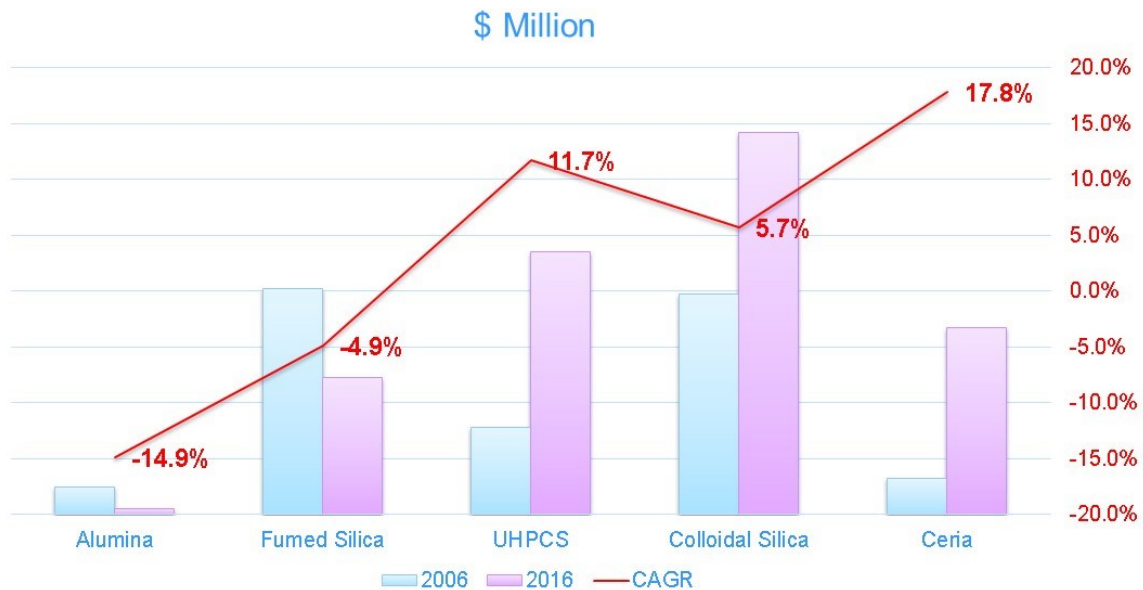
Linx Consulting is pleased to announce that we have published **SPECIALTY ABRASIVES FOR CMP, 2017**. The industry is now going through an unprecedented period of change, including the introduction of novel transistor structures such as FinFETs. These new architectures are enabling many new CMP process steps with unique slurry requirements in terms of selectivities, purity levels and defectivity requirements. In addition, traditional CMP steps such as copper and barrier are also under-going changes in the materials planarized, as well as process requirements.



Gate Architecture

These new requirements, coupled with the trend towards lower abrasives content in general and greater, push towards the chemo component of CMP rather than a reliance on mechanical aspects is re-shaping the abrasives industry. This new report allows companies to understand the impact of the change and plan for it.

The demand for specialty abrasives for CMP applications has changed dramatically over the last 10 years, as illustrated below:



This report analyzes emerging CMP processes and materials with emphasis on the trends for abrasives. Additionally, we forecast abrasive demand using the Linx Materials Models, access key suppliers, and details potential business opportunities.

Linx Consulting has followed its proven methodology with direct field research with leading CMP users, equipment suppliers, consumable suppliers and technology sources as well as rely on its proven modeling capabilities to deliver this report to our clients.

Report Structure

1. Executive Summary

- CMP Slurry demand, 2016—2021
- CMP Abrasive demand, 2016—2021
- Abrasives forecast by type
- ASPs
- Leading suppliers and buyers

2. Methodology

- Abrasives Allocation by Application and Node

3. Forecast Drivers

- Slurry Market
- Technology Roadmaps
- Wafer Market Forecast
- ITRS

4. CMP Applications to 11nm, Slurries & Emerging Technologies

- Copper bulk
- Barrier
- Tungsten
- Oxide and Polysilicon
- STI and Ceria-based
- Emerging Applications
- Silicon wafer polishing, by wafer size
 - Stock
 - Final

5. Abrasives Demand Forecasts, 2016—2021 (MT and US\$, by node and by application), by abrasives type:

- Colloidal silica
- Intermediate grade colloidal silica
- High purity colloidal silica
- Fumed silica
- High PSD fumed silica
- Ceria
- Alumina

6. Abrasive Supplier & Buyer Assessment

- Key suppliers
- Key supply chain relationships
- Key Buyers
- New entrants/technologies

7. Business Analysis & Opportunities

- Market Summary
- Abrasives by Application
- Industry Concentration
- Quality Requirements
- Conclusions

SPECIALTY ABRASIVES FOR CMP, 2017 is an industry analysis report of approximately 400 pages, and offers the latest perspectives on technology and market opportunities, as well as future technology needs.

Subscribers will receive the following benefits:

1. An electronic copy of the content of the final report in Microsoft PowerPoint and Excel formats.
2. Output from Linx Consulting's models in Excel format with the ability to modify forecast assumptions to develop alternative scenarios.
3. Company wide license to the reports.
4. One day of consulting time for the industry analysis report to advise and assist in decision making and accurately interpreting the analysis.*

Fees:

Regular subscriber—\$12,500, which includes:

1. Global corporate license
2. Electronic copy of report and all data tables
3. One day of consulting time *
4. Scenario based forecasts with the Linx Consulting models

* Note: Does not include travel expenses

Note: If CMP Markets and Technologies to the 5nm Node and Specialty Abrasives for CMP are purchased together, we will offer a 20% discount.

SPECIALTY ABRASIVES FOR CMP, 2017

Linx Consulting Industry Analysis Report

Please enter our subscription to **SPECIALTY ABRASIVES FOR CMP , 2017**. The subscription includes data files of the report sections and up to one day of consulting time to be used within 3 months of report publication. (Please note: travel fees associated with the consulting time will be billed separately). We understand that this report is available only by subscription. Subscription prices do not include sales tax if applicable.. You will invoice us for the total amount, and we will pay this invoice within 30 days of receipt.

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