

# **3M Introduces New System for Ultrathin Wafer Backgrinding**

## **3M Wafer Support System Produces Wafers Less Than 50 Microns Thick**

3M introduces the 3M Wafer Support System for ultrathin semiconductor wafer backgrinding. The new system is an alternative to the conventional tape process for backgrinding and is capable of producing wafers as thin as 20 microns. This new approach allows semiconductor manufacturers to use their existing grinding equipment to produce thinner wafers, at faster grinding speeds, with increased yields.

Developed in Japan by the laboratories of Sumitomo 3M, the 3M Wafer Support System includes both equipment and consumables for a comprehensive approach to wafer backgrinding support challenges. The 3M equipment includes a wafer mounter to attach the wafer to the glass plate with liquid adhesive, a wafer demounter to separate the glass and adhesive from the wafer after the backgrinding process, and a glass cleaner/coater. The consumable materials include 3M ultraclean UV curable spin-on adhesive and a light-to-heat conversion (LTHC) coating. The LTHC layer enables separation of the adhesive from the glass after the backgrinding process. The system provides manufacturers with the flexibility and ability to use their existing backgrinding equipment to achieve outstanding results.

"The wafer support system is a unique venture for 3M, and this is a logical step for us to take," said Carl Kessel, Ph.D., and lead specialist for 3M Electronics Markets Materials Division. "3M's knowledge of bonding and finishing processes is key to this wafer support system. We have a deep understanding of how to harness these technologies to engineer a viable alternative for producing ultrathin wafers. The benefits of the UV curable liquid adhesive are what make the 3M Wafer Support System a performance leader."

"The Wafer Support System from 3M addresses many of the problems associated with producing the extremely thin die required by subsequent packaging and assembly processes," continued Kessel.

Unlike tapes used in other systems, the liquid adhesive used in the 3M system flows into the topography of the wafer, providing even support over the entire surface and providing a rigid, uniform base. The system minimizes stress put on the wafer, resulting in less cracking and increased yields. Even bumped wafers may be reliably thinned with the 3M Wafer Support System. The system also allows manufacturers to produce wafers faster since they can increase backgrinding pressure and speed. After the backgrinding process is complete, the glass plate is easily released from the wafer by applying laser energy to the LTHC layer between the glass plate and the adhesive. The thinned wafer is easily transferred to a standard dicing tape and the adhesive is peeled off, leaving virtually no residue.

For more information about the 3M Wafer Support System or 3M Electronics Markets Materials Division, call 1-800-251-8634 or visit [www.3M.com/electronicmaterials](http://www.3M.com/electronicmaterials).

3M Electronics Markets Materials Division will be exhibiting at Booth # 2502 at SEMICON West, in San Francisco, July 12-14, 2004.

### About 3M Electronics Markets Materials Division

3M Electronics Markets Materials Division is a leading supplier to key global electronics manufacturers, offering a broad range of innovative materials and services to help produce components and subassemblies. Materials provided include next-generation adhesives, tapes, abrasives and specialty fluids and gases. In addition, Electronics Markets Materials helps customers improve their products and solve problems by helping them

improve efficiencies in their manufacturing processes using 3M technologies.

#### About 3M -- A Global, Diversified Technology Company

Every day, 3M people find new ways to make amazing things happen. Wherever they are, whatever they do, the company's customers know they can rely on 3M to help make their lives better. 3M's brands include icons such as Scotch, Post-it, Scotchgard, Thinsulate, Scotch-Brite, Filtrete, Command and Vikuiti. Serving customers in more than 200 countries around the world, the company's 67,000 people use their expertise, technologies and global strength to lead in major markets including consumer and office; display and graphics; electronics and telecommunications; safety, security and protection services; health care; industrial and transportation. For more information, including the latest product and technology news, visit [www.3M.com](http://www.3M.com).

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LaBreche Murray Public Relations Stephanie Simon, 612-392-7613 [ssimon@labrechemurray.com](mailto:ssimon@labrechemurray.com) or 3M, St. Paul Public Relations: Ron Wenaas, 651-736-7918 [www.3m.com/profile/pressbox/media\\_contacts.jhtml](http://www.3m.com/profile/pressbox/media_contacts.jhtml)

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