

3M et IBM vont développer une nouvelle forme de « colle » électronique permettant la création de semi-conducteurs 3D

Cette innovation permettra de construire pour la première fois des microprocesseurs composés de 100 puces distinctes.

ST. PAUL, Minn. & ARMONK, N.Y. - 08 sept. 2011: 3M and IBM (NYSE: [IBM](#)) today announced that the two companies plan to jointly develop the first adhesives that can be used to package semiconductors into densely stacked silicon “towers.” The companies are aiming to create a new class of materials, which will make it possible to build, for the first time, commercial microprocessors composed of layers of up to 100 separate chips.

Such stacking would allow for dramatically higher levels of integration for information technology and consumer electronics applications. Processors could be tightly packed with memory and networking, for example, into a “brick” of silicon that would create a computer chip 1,000 times faster than today’s fastest microprocessor enabling more powerful smartphones, tablets, computers and gaming devices.

The companies’ work can potentially leapfrog today’s current attempts at stacking chips vertically – known as 3D packaging. The joint research tackles some of the thorniest technical issues underlying the industry’s move to true 3D chip forms. For example, new types of adhesives are needed that can efficiently conduct heat through a densely packed stack of chips and away from heat-sensitive components such as logic circuits.

*“Today’s chips, including those containing ‘3D’ transistors, are in fact 2D chips that are still very flat structures,” said **Bernard Meyerson, VP of Research, IBM**. “Our scientists are aiming to develop materials that will allow us to package tremendous amounts of computing power into a new form factor – a silicon ‘skyscraper.’ We believe we can advance the state-of-art in packaging, and create a new class of semiconductors that offer more speed and capabilities while they keep power usage low -- key requirements for many manufacturers, especially for makers of tablets and smartphones.”*

Bonding entire wafers is a goal

Many types of semiconductors, including those for servers and games, today require packaging and bonding techniques that can only be applied to individual chips. 3M and IBM plan to develop adhesives that can be applied to silicon wafers, coating hundreds or even thousands of chips at a single time. Current processes are akin to frosting a cake slice-by-slice.

Under the agreement, IBM will draw on its expertise in creating unique semiconductor packaging processes, and 3M will provide its expertise in developing and manufacturing adhesive materials.

*“Capitalizing on our joint know-how and industry experience, 3M looks forward to working alongside IBM – a leader in developing pioneering packaging for next-generation semiconductors,” said **Herve Gindre, division***

vice president at 3M Electronics Markets Materials Division. *"3M has worked with IBM for many years and this brings our relationship to a new level. We are very excited to be an integral part of the movement to build such revolutionary 3D packaging."*

Adhesives are one of 3M's 46 core technology platforms. 3M adhesives are precisely engineered to fit customers' needs and are ubiquitous -- used in a multitude of diverse products and industries including high-tech applications, such as the semiconductor industry, consumer electronic devices, aerospace and solar applications.

For more information about 3M Electronics Markets Materials Division, its products and services visit: www.3M.com/electronicbonding

About 3M

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