

Merck KGaA Funds Printable RFID

The German pharmaceutical and chemical company is partnering with the Technical University of Darmstadt to develop printable RFID chips based on inorganic materials.

By Rhea Wessel

Jan. 30, 2006—A new lab focusing on inorganic composite materials for RFID will open in early March at Germany's Technical University of Darmstadt, under an agreement signed by the university and Merck KGaA, a global pharmaceutical and chemical company, also based in Darmstadt.

Ten researchers from different disciplines will work together to create methods of producing printable radio frequency chips based on inorganic materials. These new chips will potentially work much faster than those based on organic materials, says Wolfram Jaegermann, a surface sciences professor at the university who will be working in the lab.

"Inorganic materials allow higher conductivity due to more mobility of the charge carriers," says Jaegermann, "and this presents the possibility of creating a more efficient device."

The jointly operated lab will be located at the university's chemistry department, and be staffed by researchers from the departments of material science, macromolecular and inorganic chemistry, printing machinery and processes, and microelectronics. Merck is investing 1 million euros to establish the lab, after which the two partners will share equally in its operating costs—approximately 1 million euros per year.

"The interdisciplinary approach of the project makes it unique," says Edgar Doersam, a professor of printing sciences involved in the lab. If all goes well, he explains, the staff may expand to as much as 20 to 25 people during the next two to three years, and additional partners may sign on, as well.

Merck plans to file for patents based on any of the lab's discoveries and inventions, which it will also market. The immediate objective is to lower the cost of RFID chips by creating a technology that will allow them to be imprinted directly onto packaging using conventional printing technology.

At present, a chip costs about 50 cents to produce. The partners aim to lower the cost to 1 cent, says Steffen Mueller, head of corporate media relations at Merck. The research project—Merck's first involving RFID—is at an early stage. The company has no commercial RFID applications at this point; its marketing strategy will depend on the discoveries made. It is unclear when such products might be ready for market, but Merck officials claim printable RFID chips are years away from becoming a reality.

"Merck KGaA is a research-based pharmaceuticals and chemicals company," explains company spokeswoman Phyllis Carter. "The new research lab established with the Technical University of Darmstadt is another example of Merck's commitment to scientific research." She notes that Merck KGaA has no connection with the pharmaceutical firm Merck & Co., a former U.S. subsidiary that has been completely independent of Merck KGaA since 1917.

