



Investor News

Bayer MaterialScience to participate in the development of holographic storage media

Opening up a new dimension

- Cooperation agreement signed with high-tech US company
 - Aim is for storage media with a capacity of up to 1.6 terabytes
 - Highly promising market for Bayer MaterialScience's polymer raw materials
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Leverkusen / April 29, 2005 – Bayer MaterialScience AG has signed a Joint Development Agreement with the US start-up company, InPhase Technologies Inc., Longmont, CO, for the development and supply of polymer raw materials for the production of optical storage media with a very high storage capacity. InPhase was formed at the end of 2000 from Lucent Technologies and Bell Labs, and is currently the technology leader in holographic storage media. Bayer MaterialScience is a leading market and technology player in the field of polymers for optical storage data, and has already been very much involved in the development of CDs, DVDs and Blu-ray Discs.

Bayer MaterialScience will invest US\$ 5 million in total for purchasing equity from InPhase. Furthermore, Bayer MaterialScience has acquired a license to use the research results gleaned from cooperation with InPhase, as well as InPhase's fundamental know-how on the subject of holography, for applications that extend beyond the field of optical storage media. "It gives us a tremendous opportunity to build a strategic competitive position with sustained added value in holographic applications," says Ian Paterson, the member of the Bayer MaterialScience Board of Management responsible for Marketing and Innovation. "The project is another example of the way in which innovative developments from Bayer MaterialScience help to turn our customers' visions into reality – according to our motto:

VisionWorks.”As part of this partnership, InPhase will launch a holographic data storage medium based on products from Bayer MaterialScience and a recording and reading device with a capacity of 300 Gigabytes in 2006.

Marked increase in capacity requirements for transportable storage media

Worldwide, the demand for media for storing larger and larger quantities of digital data is increasing all the time. This has led to the development of holographic discs from InPhase that will offer 50 times the memory capacity of a DVD or 460 times that of a CD. With holographic memory techniques – as in the production of DVDs – lasers are used to record or "write" the information to a light sensitive polymer. Unlike in DVD manufacture, where the data are written on the surface, holography makes use of the entire volume of the storage material.

In research activities connected with the new cooperation agreement, Bayer MaterialScience is aiming to further develop with InPhase these specialty polymers to make them also suitable for the production of discs with a capacity of up to 1.6 terabytes. This enormous volume of data is equal to 780 million DIN A4 pages of text, which, in turn, is equivalent to the contents of a library with around four million books. Alternatively, a polymer disc of this kind can accommodate 1.6 million high-resolution photos. A TV addict could spend ten days and ten nights continuously watching films, while a music enthusiast could sit for 18 months in front of his loudspeakers without ever changing the disc. “We feel that this application will open up a very promising market for our raw materials,” says Dr. Joachim Wolff, head of the Coatings, Adhesives, Sealants Business Unit at Bayer MaterialScience.

The layer for storing the data is, as in a sandwich structure, covered above and below with a protective, transparent plastic layer that gives the disc high mechanical and chemical resistance. "With its product portfolio and many years of experience in the development of optical storage media, Bayer MaterialScience is our partner of choice in the field of polymer research and the supply of these products," says Nelson Diaz, President and CEO of InPhase Technologies.

Highly promising fields of application – not only in optical storage media

For the end of 2006, InPhase Technologies will introduce write-once discs for professional archiving. They will be followed later by re-writable discs and products for the mass market, such as handheld entertainment devices. Bayer MaterialScience

will also carry out intensive analysis of possible applications outside the market for optical storage media. In the field of lighting and optics, for example, holographic materials might one day be used in displays and sensors in car interiors, projection surfaces and signal lights, opening up completely new visual dimensions.

In other applications, volume holograms have already begun making a name for themselves. Transparent projection screens made of Makrolon[®] in shop windows, trade fairs or airports, for example, attract the attention of passers-by and visitors thanks to the razor-sharp, brilliantly colored projections. Modern light management in office buildings can be revolutionized with the aid of holography, and holograms in passports and driver's licenses have for many years been making an important contribution to rendering such documents forgery-proof.

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