

Uflex New Plant Installations

Later this year Uflex, the Indian packaging film producer, takes a leap towards its aim of becoming the biggest hologram producer in the world when it starts production on new equipment at its holography plant in Jammu, Kashmir, about 600 km NW of Delhi. It is expanding this operation with the installation of three of the biggest hologram production machines in the world, as well as another 15 hard embossing machines.

As reported in February (see HN Vol 25 No 2), Uflex aims to double its holographic film production this year, to 1000 tonnes/month, and has the ambition of becoming the biggest hologram producer within five years. It has three holographic production plants in India, with expansion currently focused on Jammu, where it is installing three soft embossing machines with a web width of 2650 mm



Beijing Creation's 2.7m soft embossing machine for Uflex

and 15 hard embossing machines with a web width of 1300 mm.

Extra-Wide Machines from Beijing Creation and Diavy

The first soft embossing machine has been built by Chinese hologram production equipment manufacturer Beijing Creation Science Technology Co. This is due for delivery in June and should be in production in July, Uflex'

G. P. Pathak told *Holography News*®. It will run at 60 m/minute. Two similarly specified machines, being made by Italian company Diavy srl, are due for delivery in September, although the production speed of these is 100 m/minute. The soft embossing machines will be used to emboss on 12 µm PET and 18-20 µm OPP.

Diavy is also building 15 hard embossing machines at 1.3 m web width for delivery to Jammu later in the year.

Mr Pathak also told us that the new plant will have two metallising vacuum chambers (capable of metallising paper as well as film) and four 1700 mm wide coating lines operating at 350 m/minute. He is working on the expanded plant being fully operational by the end of the year.

Contact: www.uflexholography.com; www.diavysrl.com; www.czbj.cn.

A Photopolymer in Search of A Developer

Researchers at the University of Alicante in Spain have developed a new photopolymer which may be used as a holographic recording material. It is said to have a lower potential toxicity than conventional materials and is characterized as being environmentally friendly, since it does not contain any petroleum-derived solvents or other components classified as toxic, biotoxic, explosive, radioactive, oxidising, corrosive, inflammable or environmentally hazardous, and no such substances are used to prepare it.

Photopolymers are made up of a photopolymerization initiator, sensitizing dye and one or more polymerizable monomers in a polymer matrix which acts as a support. They are usu-

ally based on methyl methacrylic or other esters derived from acrylic acid so they are toxic. Since they need to be produced in hydrophobic conditions, inflammable organic solvents must be used, thus implying a problem of safety, difficulty in handling and a high risk of environmental contamination.

Furthermore, when these materials reach the end of their useful life, toxic inflammable organic solvents are needed to recycle them.

Other photopolymers use acrylamide as the polymerizable monomer. These materials are distinguished by their high toxicity and carcinogenic properties. Derivatives of acrylic acid, epoxidic acrylates or silicon gels

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