



TDI Announces New Tools for Molecular Transfer Lithography Processes

*The low-cost exaGlide 10 Implements Water Dissolvable Templates
to Enable Sub-100 nm Nanopatterning*

Santa Clara, CA, October, 2008 - In providing a whole product solution to implement the patented molecular transfer lithography (MxL) processes, a class of nanopatterning procedures that use water-dissolvable nanostructured polyvinyl alcohol (PVA) templates, TDI announces for sale the exaGlide 10 series, a lamination system that implements adhesion mechanisms, which bond large area PVA templates coated with functional materials to substrates, from 25 mm to 300 mm in width. To achieve the MxL processes, after the exaGlide 10 completes the bonding process through thermal, UV, or moisture initiated adhesion mechanisms, the templates are then dissolved away in water leaving the nanopatterned functional material adhered to the surface of the substrate, ready for further processing or final use. In addition to the exaGlide 10, TDI also manufactures and sells the water-dissolvable conformal PVA templates, which are replicated to specification from master surface topography.

Whereas other techniques, such as nanoimprint lithography, physically separate the template from the substrate after patterning, the MxL processes are unique and highly differentiated, as the template is dissolved away after patterning, thereby eliminating that separation step. It is this demolding step that is common to all other methods of contact printing, and that is a limiting factor, as it lowers yields significantly where there is no other alternative but for optical projection photolithography technologies. But the MxL system, with chemical dissolution of the template using water, provides a solution to the limitations of demolding. And it is a rather fortunate circumstance that PVA, a common low-cost material, when prepared and processed properly, has such outstanding fidelity to reproduce features to 10 nm, is dissolvable in water, and does not dissolve in most organic materials such as resist, which enables the practical implementation of the MxL methods. Patents have been issued for the PVA templates and MxL processes, both of which were originally discovered and developed at Stanford University.



“While the innovation of MxL lies within the chemistry of the water soluble PVA templates and associated transfer processes, tooling is required to realize the potential of this nanopatterning technology,” notes Charles Schaper, President and CEO of TDI, continuing: “The exaGlide 10, which has been extensively tested and now productized for broad distribution, will allow the engineer and scientist to conveniently utilize the PVA water dissolvable templates to implement the MxL patterning processes, producing high resolution features on substrates, including silicon wafers, hard disks, and flexible films, in a reliable manner.”

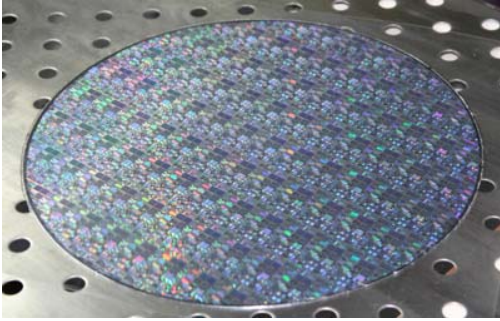
With patents 6,849,558, and 7,345,002, and other worldwide licensed patents, TDI’s MxL processes and PVA water dissolvable templates, already in use for production applications in the manufacture of LED components used as illumination sources, form the core of a novel nanopatterning solution, which is made complete with the addition of the exaGlide series 10 tooling technology. For more information, consult TDI’s web site, www.transferdevices.com.

About TDI Nanopatterning

With the goal to productize the MxL class of nanopatterning processes that are enabled with water dissolvable templates, of which patents have been granted and licensed, TDI designs, manufactures and markets whole product molecular transfer lithography solutions comprising tooling and templates, for applications in the manufacture of optoelectronics, advanced displays, semiconductors, data storage, and energy devices.



ExaGlide 10r: For large area nanopatterning of substrates from 25 mm to 300 mm in width, the exaGlide implements adhesion mechanisms to enable molecular transfer lithography processes with water dissolvable PVA templates for producing feature sizes to 10 nm and below.



PVA templates: High resolution, conformal nanopatterning templates, which dissolve in water but not in most functional materials such as resist and other organic polymers, enable the MxL class of processes, replicated conveniently from large area master topography.