

“Writing” by Laser Induced Forward Transfer: bio and sensing applications

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Laser-Induced Forward Transfer (LIFT) is an advantageous method used for the deposition of a wide range of materials both in solid or liquid phase. In LIFT, a laser beam is focused through a transparent support plate onto the backside of a thin film coated with the material to be transferred (donor film). Each single laser pulse promotes the transfer of the thin film material (donor film) as a pixel onto a receiver substrate that is usually placed parallel and facing the thin film at a short distance. The donor substrate can be previously coated with a polymeric layer (triazene polymer TP), which is called dynamic release layer (DRL) or sacrificial layer. This layer has the purpose to improve the process efficiency and to reduce the risk of damaging the layer to be transferred. The technique has been successfully applied for sensors fabrication, patterning of surfaces for controlled cell culture, etc.