Title (en)

SURFACE MODIFICATION PROCESSING OF FLAT PANEL DEVICE SUBSTRATES

Title (de)

BEHANDLUNG ZUR OBERFLÄCHENMODIFIZIERUNG VON SUBSTRATEN VON FLACHTAFEL-VORRICHTUNGEN

Title (fr)

TRAITEMENT DE MODIFICATION DE SURFACES DE SUBSTRATS DE DISPOSITIFS A ECRAN PLAT

Publication

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Application

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Abstract (en)

[origin: WO9606694A1] A method for performing surface processing of flat panel display substrates at various points during manufacturing. Such processing is required, for example, to remove photoresist after a photolithography step. Cleaning of glass substrates at the beginning of the manufacturing sequence is also required. Some layers of the device, for example color filters and polyimide alignment layers, may be patterned by this method by the use of a mask (54) in the surface processing. A high intensity pulsed beam of radiation (18) is swept across the surface to be processed (21), while a reactive gas (24) is flowed across the surface where the beam strikes it. In a cleaning or material removal process, the beam of radiation (18) causes the material to react with the gas, resulting in gaseous products (26) which are drawn away from the surface. In a curing process, for polyimide or spin-on dielectric, for example, the beam of radiation (60) causes the polymer to cross-link, while the flowing gas (64) assists in the reaction and removal of species which are released in the cross linking process. Processing of a substrate (74) can be accomplished by translating the substrate (74) under a beam (60) which is larger than the width of the substrate. Processing may be accomplished by multiple scans of the surface or by scanning with multiple beams.

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