

[0101] Another method of depositing display material is shown in FIG. 24. FIG. 24 shows lithography being used to pattern the display material. Lithography involves using a block 183 with a pattern engraved in the bottom surface of the block 183. The bottom surface of the block 183 contacts the display material.

[0102] FIG. 25 shows yet another method of depositing display material onto the display tape. There display material is deposited in a pattern onto the display tape 168. The display material is deposited by a container 183 that contains the display material. The container 183 is placed over the display tape 168. The display material drops onto the display tape 168 in a pattern.

[0103] FIGS. 26A-26D shows generally the process of planarization material being added onto the substrate. FIG. 26A shows a planar side view of a substrate 190. FIG. 26B shows openings or receptor regions 192 created and blocks deposited into the substrate. FIG. 26C shows deposition of planarization material 194 and openings being created into the substrate. FIG. 26D shows deposition of interconnect 198 and pattern interconnect.

[0104] While an array of components (e.g. display components) for an assembly have been described as examples of the invention, an array of other assemblies such as x-ray detectors, radar detectors, micro-electro-mechanical structural elements (MEMS) or, generally, an assembly of sensors or actuators or an assembly of circuit elements also may be produced using the claimed invention. Thus, for example, flexible antennas, other sensors, detectors, or an array of circuit elements may be fabricated using one of the embodiments of the inventions. Other aspects and methods of the present invention as well as apparatuses formed using these methods are described further below in conjunction with the following figures.

[0105] Listed below are related U.S. Patent Applications that describe various improvements to the methods and devices of the invention described herein. These patent applications are incorporated by reference. Additionally, a U.S. Patent is also incorporated by reference.

[0106] Co-pending U.S. patent application Ser. No. _____, entitled "Methods for Transferring Elements From A Template To A Substrate" (Docket No. 003424.P009), filed by Jeffrey J. Jacobsen, Mark A. Hadley, and John Stephen Smith and assigned to the same Assignee of the present invention, describe an FSA on a template with transfer to another substrate. These co-pending applications are hereby incorporated herein by reference.

[0107] Co-pending U.S. patent application Ser. No. _____, entitled "Methods and Apparatuses for Fabricating A Multiple Module Assembly" (Docket No. 003424.P010), filed by Jeffrey J. Jacobsen, Glenn Wilhelm Gengel, and Gordon S. W. Craig and assigned to the same Assignee as the present invention, describes an electronic modular assembly. This co-pending application is hereby incorporated herein by reference.

[0108] Co-pending U.S. patent application Ser. No. _____, entitled "Apparatuses and Methods Used in Forming Electronic Assemblies" (Docket No. 003424.P011), filed by Jeffrey J. Jacobsen, Glenn Wilhelm Gengel, and John Stephen Smith and assigned to the same Assignee as the present invention, describes a method of molding substances. This co-pending application is hereby incorporated herein by reference.

[0109] Co-pending U.S. patent application Ser. No. _____, entitled "Web Process Interconnect in Electronic Assemblies" (Docket No. 003424.P012), filed by Jeffrey J. Jacobsen, Glenn Wilhelm Gengel, Mark A. Hadley, Gordon S. W. Craig, and John Stephen Smith and assigned to the same Assignee as the present invention, describes a method of creating various interconnects on a web tape. This co-pending application is hereby incorporated herein by reference.

[0110] Co-pending U.S. patent application Ser. No. _____, entitled "Apparatuses and Methods for Forming Assemblies" (Docket No. 003424.P016), filed by Jeffrey J. Jacobsen and assigned to the same Assignee as the present invention, describes a method of rolling blocks into their recessed regions. This co-pending application is hereby incorporated herein by reference.

[0111] U.S. Pat. No. 5,545,291 entitled "Method for Fabricating Self-Assembling Microstructures," filed by John S. Smith and Hsi-Jen J. Yeh, issued Aug. 13, 1996.

[0112] In the preceding detailed description, the invention is described with reference to specific embodiments thereof. It will, however, be evident that various modifications and changes may be made thereto without departing from the broader spirit and scope of the invention as set forth in the claims. The specification and drawings are, accordingly, to be regarded in an illustrative rather than a restrictive sense.

What is claimed is:

1. A flexible display device comprising:

a substrate; and

an active matrix display backplane coupled to said substrate.

2. The flexible display device as in claim 1 wherein said active matrix display backplane comprises a plurality of blocks that are deposited onto said substrate.

3. The flexible display device as in claim 1 wherein said active matrix display backplane comprises a plurality of blocks that are deposited onto a polarizing film.

4. The flexible display device as in claim 2 wherein said display device conforms to a desired shape of an object which is planar when said flexible display device is attached to said object.

5. The flexible display device as in claim 2 wherein said display device conforms to a desired shape of an object which is non-planar when said flexible display device is attached to said object.

6. The flexible display device as in claim 2 wherein each of said blocks comprises an active circuit element which drives a picture element.

7. The flexible display device as in claim 2 further comprising:

a display generation substrate coupled to said active matrix backplane.

8. The flexible display device as in claim 1 wherein said active matrix backplane comprises at least one electrode for each picture element.

9. The flexible display device as in claim 1 wherein said active matrix display is conformal.

10. The flexible display device as in claim 1 wherein the substrate is flexible.