flexible sheet with a thickness of approximately 10 μm – 1000 μm. In one embodiment, substrate 12 may possess sufficient porosity. Porosity magnitude (e.g., porous hole size) may be optimized such that gas molecules trapped between a template and substrate 12 during imprinting may be substantially dissipated as described in further detail herein. The porous size needs to be optimized to allow gases, He, N2, O2 or others can flow through, but imprinting fluid or moisture can not get into the substrate.

[0027] Substrate 12 may be coupled to or supported by one or more rollers 14. For example, as illustrated in FIG. 1, film sheet 12 is supported by rollers 14a and 14b. It should be noted that any number of rollers 14 may be used depending on design considerations between the first roller and the last roller. As is further explained, such rollers aid in both initiating imprinting of a patterned layer on the substrate and separating the subsequent patterned layer from the template, depending on the direction the substrate is translating. Such rollers may be further referred to herein as "imprint/separation rollers."

[0028] Rollers 14 may facilitate movement of at least a portion of substrate 12. For example, rollers 14a and 14b of FIG. 1 may each rotate about an axis to facilitate movement of substrate 12 in the direction from roller 14a to roller 14b along pathway 16, 17, ~~18~~. Such movement can initiate a contact between the template 18 and flexible substrate in the presence of imprinting fluid. Subsequently, the motion of matched translation movements of the template and flexible substrate expands the fluid-filling portion of the interface. FIG. 2 illustrates the template and substrate interface where the early fluid filled portion

(e) solidifying the polymerizable material to form a patterned layer on the flexible film substrate; and

(f) separating the template from the formed patterned layer on the flexible film substrate.

9. The method of claim 8 wherein the flexible film substrate is supported by first and second spaced apart imprint/separation rollers as it is translated from the first to second position.

10. The method of claim 8 wherein either end of the flexible film substrate is wound about first and second winding roller and wherein the translation of the flexible film substrate occurs through winding or unwinding of the first and second winding rollers.

11. The method of any of claims 8-10 wherein the separating further comprising continuing simultaneously translating the flexible film substrate and template in the first direction such that the flexible film substrate with the formed patterned layer is peeled away from the template.

12. The method of any of claims ~~8-11~~ wherein the separating further comprising simultaneously translating the flexible film substrate and template in a second direction opposite the first direction such that the flexible film substrate with the formed patterned layer is peeled away from the template.

13. The method of any of claims 8-12 further comprising removing electrostatic charge from the flexible film substrate prior to contacting the flexible film substrate with the imprint template.

14. The method of any of claims 8-13 further comprising overlaying a protective film on the formed pattern layer after separating the flexible film substrate from the template.

15. The method of any of claims ~~8-14~~ wherein the width of the flexible film substrate is greater than the width of the template and subsequent to the separating step further comprising the steps of moving the template perpendicular relative to the first direction a distance equivalent to the width of the template and repeating steps (b)-(e) to form an additional patterned layer on the flexible film substrate adjacent the initially formed patterned layer.

flexible sheet with a thickness of approximately 10 μm – 1000 μm. In one embodiment, substrate 12 may possess sufficient porosity. Porosity magnitude (e.g., porous hole size) may be optimized such that gas molecules trapped between a template and substrate 12 during imprinting may be substantially dissipated as described in further detail herein. The porous size needs to be optimized to allow gases, He, N2, O2 or others can flow through, but imprinting fluid or moisture can not get into the substrate.

[0027] Substrate 12 may be coupled to or supported by one or more rollers 14. For example, as illustrated in FIG. 1, film sheet 12 is supported by rollers 14a and 14b. It should be noted that any number of rollers 14 may be used depending on design considerations between the first roller and the last roller. As is further explained, such rollers aid in both initiating imprinting of a patterned layer on the substrate and separating the subsequent patterned layer from the template, depending on the direction the substrate is translating. Such rollers may be further referred to herein as "imprint/separation rollers."

[0028] Rollers 14 may facilitate movement of at least a portion of substrate 12. For example, rollers 14a and 14b of FIG. 1 may each rotate about an axis to facilitate movement of substrate 12 in the direction from roller 14a to roller 14b along pathway 16, 17, 19. Such movement can initiate a contact between the template 18 and flexible substrate in the presence of imprinting fluid. Subsequently, the motion of matched translation movements of the template and flexible substrate expands the fluid-filling portion of the interface. FIG. 2 illustrates the template and substrate interface where the early fluid filled portion

(e) solidifying the polymerizable material to form a patterned layer on the flexible film substrate; and

(f) separating the template from the formed patterned layer on the flexible film substrate.

9. The method of claim 8 wherein the flexible film substrate is supported by first and second spaced apart imprint/separation rollers as it is translated from the first to second position.

10. The method of claim 8 wherein either end of the flexible film substrate is wound about first and second winding roller and wherein the translation of the flexible film substrate occurs through winding or unwinding of the first and second winding rollers.

11. The method of any of claims 8-10 wherein the separating further comprising continuing simultaneously translating the flexible film substrate and template in the first direction such that the flexible film substrate with the formed patterned layer is peeled away from the template.

12. The method of any of claims 8-10 wherein the separating further comprising simultaneously translating the flexible film substrate and template in a second direction opposite the first direction such that the flexible film substrate with the formed patterned layer is peeled away from the template.

13. The method of any of claims 8-12 further comprising removing electrostatic charge from the flexible film substrate prior to contacting the flexible film substrate with the imprint template.

14. The method of any of claims 8-13 further comprising overlaying a protective film on the formed pattern layer after separating the flexible film substrate from the template.

15. The method of any of claims 12 wherein the width of the flexible film substrate is greater than the width of the template and subsequent to the separating step further comprising the steps of moving the template perpendicular relative to the first direction a distance equivalent to the width of the template and repeating steps (b)-(e) to form an additional patterned layer on the flexible film substrate adjacent the initially formed patterned layer.