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(74) Agent: **KORDZIK, Kelly, K.**; 1807 West Braker Ln
C-100A, Austin, TX 78758 (US).

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(71) Applicant (*for all designated States except US*): **MOLECULAR IMPRINTS, INC.** [US/US]; 1807 West Braker Ln, Bldg. C-100, Austin, TX 78758-3605 (US).

(72) Inventors: **NIMMAKAYALA, Pawan, K.**; 3201 Duval Road #525, Austin, TX 78759 (US). **CHOI, Byung-Jin**; 11512 Medallion Lane, Austin, TX 78750 (US).

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(54) Title: ALIGNMENT SYSTEM AND METHOD FOR A SUBSTRATE IN A NANO-IMPRINT PROCESS

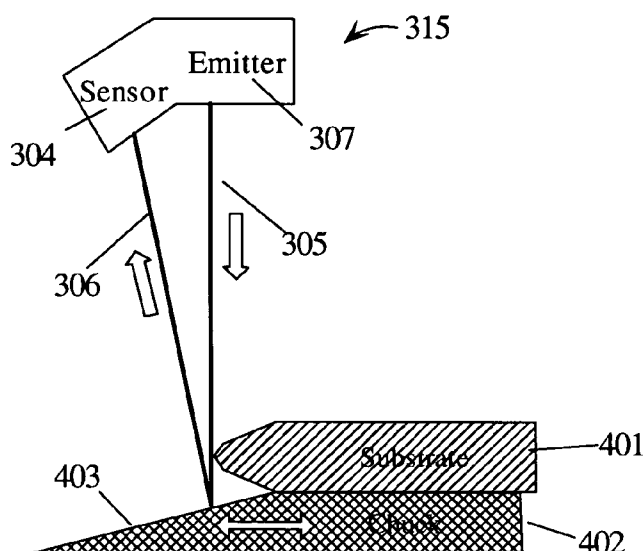


FIG. 4A

(57) Abstract: A transparent imprint template mold is configured with gratings surrounding the active imprint area. The gratings are fabricated at the same time as the active area and thus accurately define the active area with respect to the gratings. The substrate is positioned in tool coordinates under the template mold. A sensor system generates a beam of optical energy and receives reflected energy only at a specific angular window and is used to locate the template mold. The sensor system is scanned to locate the substrate and the gratings in tool coordinates. In this manner, the relative position of the template mold is determined with respect to the substrate in tool coordinates. The substrate is then accurately positioned with respect to the template mold. The system may be used to track imprinted pattern position relative to the substrate and to determine concentricity of patterns to substrates.