Claims

1. An imprint lithography template comprising:
a body having a first side and a second side,
a mesa extending from the first side of the body, the mesa having edges and further including a patterned area, a leading edge border, and a trailing edge border,

wherein the patterned area has pattern features having a height and is surrounded by the leading and trailing edge borders with the leading edge and trailing edge borders extending from the patterned area to the mesa edges,

wherein the leading edge border is formed along first pair of adjacent mesa edges and includes dummy fill features of similar height as the patterned area features, and

wherein the trailing edge border is formed along a second pair of adjacent mesa edges, opposite the first pair, and includes a recess that extends to the mesa edges, the recess having a depth that is similar to the height of the patterned area features.

2. The imprint lithography template of claim 1 wherein the mesa corners are chamfered.

3. The imprint lithography template of claims 1 or 2 wherein the dummy fill features are elongated and wherein at least a portion of such features are oriented parallel to the adjacent mesa edge.

4. The imprint lithography template of claim 3 wherein the dummy fill features comprise rows of staggered bars.

5. The imprint lithography template of claim 3 wherein the dummy fill features comprise gratings.

6. The imprint lithography template of claim 5 further comprising additional gratings oriented orthogonal to the mesa edge.

7. An imprint lithography method comprising:

depositing a first portion of polymerizable material on a first field on a substrate;

contacting the deposited first portion of polymerizable material with the imprint lithography template of any one of the above claims;

solidifying the first portion of polymerizable material to form a first patterned layer on the first field of the substrate, the first patterned layer having formed dummy features along adjacent first and second edge regions of the first patterned layer, the formed dummy features corresponding to the dummy features of the leading edge border of the template;

separating the template from the formed first patterned layer;

depositing a second portion of polymerizable material on a second field on the substrate, the second field positioned adjacent the first field and along the first edge region having formed dummy features;

positioning the template in superimposition with deposited polymerizable material on the second field such that the corresponding edge region of the trailing edge border of the template overlaps the formed dummy features of the first edge region of the first patterned layer;

contacting the deposited second portion of polymerizable material with the template;

solidifying the second portion of polymerizable material to form a second patterned layer on the second field of the substrate; and

separating the template from the formed second patterned layer.

8. The imprint lithography method of claim 7 further comprising:

depositing a third portion of polymerizable material on a third field on the substrate, the third field positioned adjacent the first field and along the second edge region having formed dummy features;

positioning the template in superimposition with the deposited polymerizable material on the third field such that the corresponding edge region of the trailing edge border of the template overlaps the formed dummy features of the second edge region of the first patterned layer;

contacting the deposited third portion of polymerizable material with the template;

solidifying the third portion of polymerizable material to form a third patterned layer on the third field of the substrate; and

separating the template from the formed third patterned layer.

9. The imprint lithography method of claim 8 further comprising:

depositing a fourth portion of polymerizable material on a fourth field on the substrate, the fourth field positioned diagonal to the first field and adjacent the second and third fields;

positioning the template in superimposition with the deposited polymerizable material on the fourth field such that the corresponding edge region of the trailing edge border of the template overlaps dummy features formed in edge regions of the second and third patterned layer;

contacting the deposited fourth portion of polymerizable material with the template;

solidifying the fourth portion of polymerizable material to form a fourth patterned layer on the fourth field of the substrate; and

separating the template from the formed fourth patterned layer.

10. The imprint lithography method of claim 9 wherein there is only a single overlap at the intersection of the first, second, third and fourth fields.