1. **Purpose**

1.1. This procedure describes how to apply, expose, and develop 1.5um thick photo resist using S1818.

2. **Scope**

2.1. This procedure provides processing information on how to Apply, Expose, and Develop photo resist. The use of this process procedure is for faculty, staff, and outside companies that need access and use of the shared equipment in the OPF laboratory. Internet connection is required to view process procedures.

3. **Definitions**

3.1. Shipley S1818 positive photoresist thickness range is from approximate 1.5 – 2.2um.

4. **Responsibilities**

4.1. It is the responsibility of the Laboratory Manager to ensure that any users of this process procedure have been trained and understand the use of the mask aligner, resist spinner, chemical hood, and chemical safety protocol.

5. **Equipment/Material**

5.1. 813 Hood
5.2. Suss Mask Aligner MA6
5.3. Headway Resist Spinner
5.4. Hot Plates or Convection Ovens
5.5. Nikon Microscope
5.6. HMDS
5.7. S1818 Resist
5.8. MF-319 Developer
5.9. Pyrex Glass Beakers
5.10. Wafer Dipper
5.11. Stainless Steel Wafer Tweezer
5.12. Silicon wafer or substrates
5.13. Clean room wipes
5.14. Disposable Pipets
### Effective Date:
April 29, 2010

### Title
Photolithography Procedure Using S1818 – 1.5 um

### Originator:
Paul Mak

### Revision:
01

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**6. Procedure**

<table>
<thead>
<tr>
<th>Step No.</th>
<th>Description</th>
<th>Equipment</th>
<th>Conditions</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PHOTOLITHOGRAPHY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Dehydrate Wafers</td>
<td>Hot Plate Ovens</td>
<td>115°C for 5 min 120°C for 30 min</td>
<td></td>
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<tr>
<td>1.2</td>
<td>Spin on HMDS</td>
<td>Headway Spinner</td>
<td>2000 rpm for 30 sec</td>
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<tr>
<td>1.3</td>
<td>Spin on S1818</td>
<td>Headway Spinner</td>
<td>3000 rpm for 30 sec</td>
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</tr>
<tr>
<td>1.4</td>
<td>Soft Bake (Prebake)</td>
<td>Oven Hot Plate</td>
<td>90°C for 30 min 115°C for 60 sec</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>Exposure</td>
<td>MA6</td>
<td>Ch 2 for 7 sec/ Ch 1 for 14 sec</td>
<td>Hard Contact</td>
</tr>
<tr>
<td>1.6</td>
<td>Develop</td>
<td>813 Hood</td>
<td>MF-319 until clear (40 sec)</td>
<td>Agitate gently back and forth</td>
</tr>
<tr>
<td>1.7</td>
<td>Rinse in DI H2O</td>
<td>813 Hood</td>
<td>1 min</td>
<td></td>
</tr>
<tr>
<td>1.8</td>
<td>Dry with N2</td>
<td>813 Hood</td>
<td>Blow dry both side on top of cleanroom wipe</td>
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<tr>
<td>1.9</td>
<td>Hard Bake (Postbake)</td>
<td>Oven or Hot Plate</td>
<td>120°C for 30 min/ 120°C for 5 min</td>
<td></td>
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<tr>
<td>1.10</td>
<td>Inspection</td>
<td>Nikon Microscope</td>
<td>Resolution</td>
<td></td>
</tr>
<tr>
<td>1.11</td>
<td>Descum (if necessary)</td>
<td>Tepla M4L</td>
<td>300W, O2, 5 min</td>
<td></td>
</tr>
</tbody>
</table>

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**7. Record Retention**

7.1 N/A

**8. Reference Documents**

9.1 N/A