



Rubicon Technology

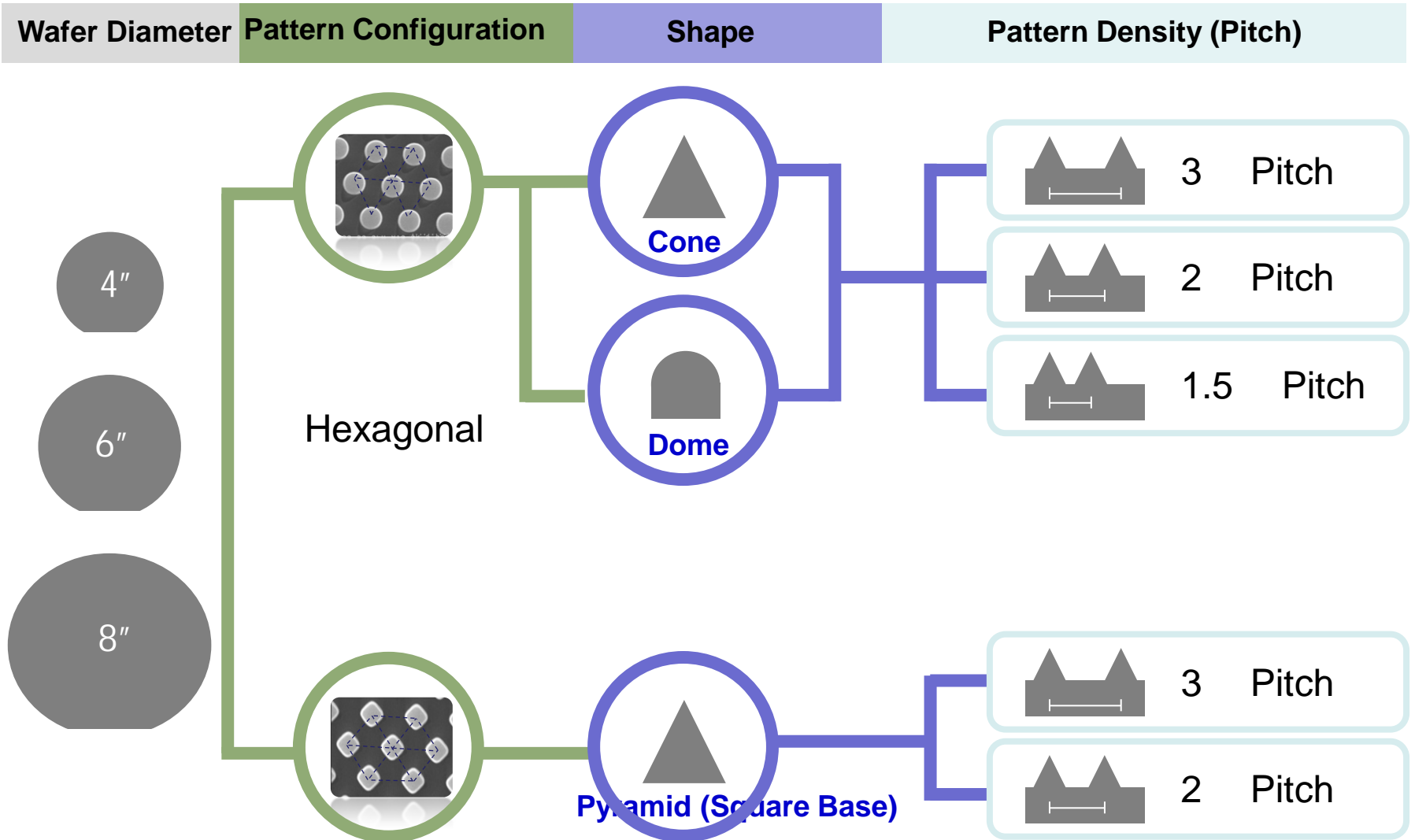
Evolving Science. Evolving Solutions.

Patterned Sapphire Substrates

PRODUCT MATRIX

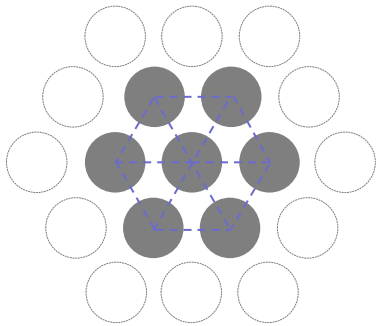
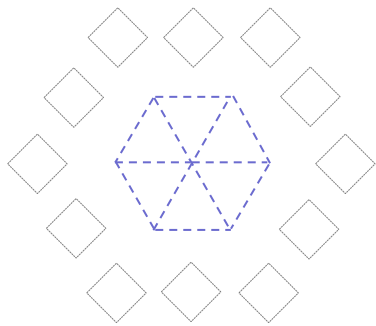
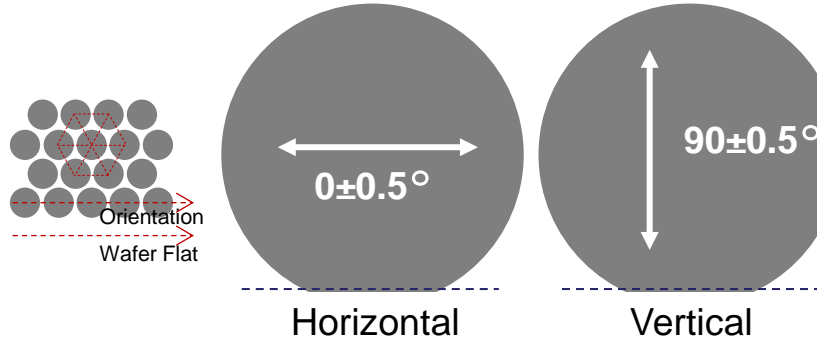
Product Matrix

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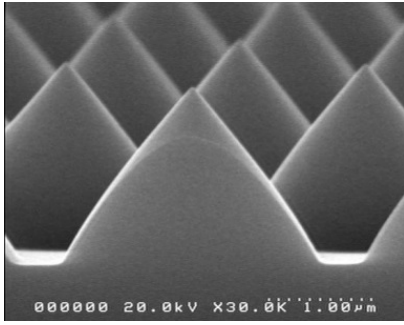
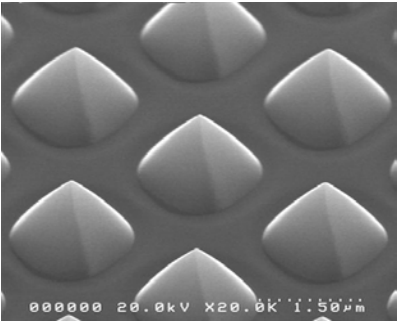
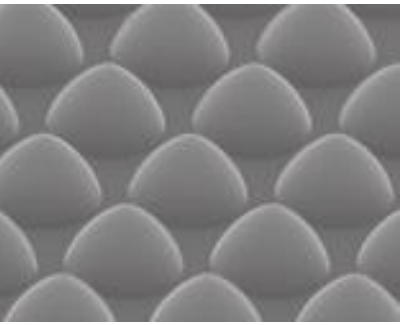
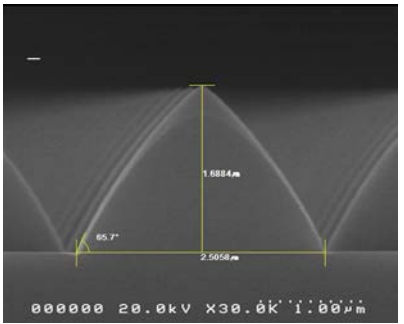
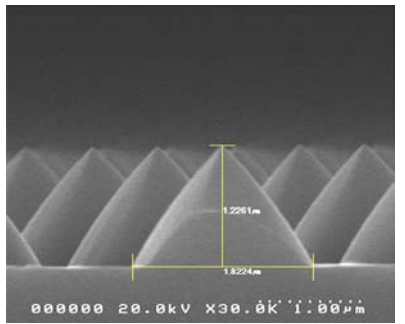
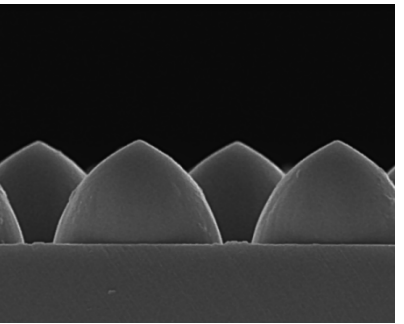


Design of Pattern

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	Cone or Dome	Square Pyramid	Customization
Geometry			
Description	<ul style="list-style-type: none"> • Hexagonal Configuration • Circular hexagon: cone or dome • Square hexagon: pyramid 		Other custom designs available upon request
Hexagon Orientation (with respect to Flat or Notch)			

Design of Shape

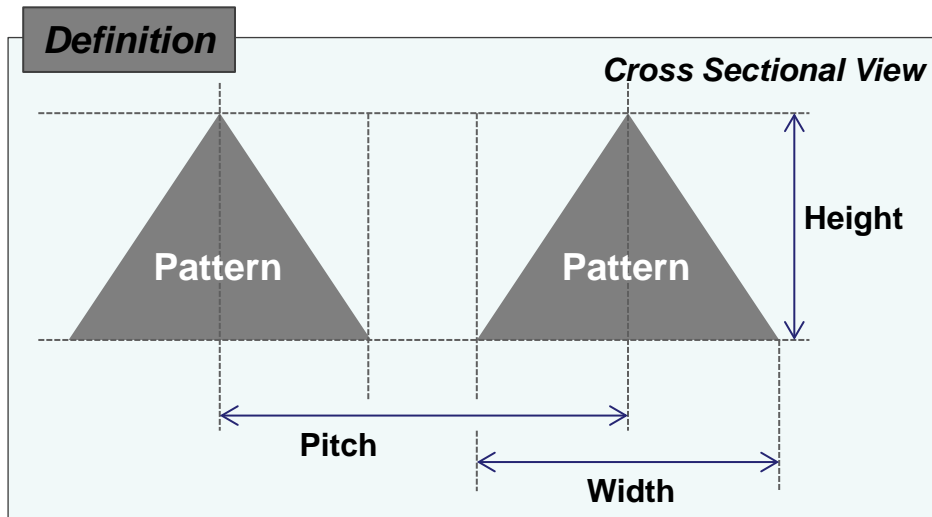
	Cone	Square Pyramid	Dome
Top View	 <p>SEM image showing a top view of a single cone. The image includes technical data at the bottom: 000000 20.0kV X30.0k 1.00um.</p>	 <p>SEM image showing a top view of a square pyramid. The image includes technical data at the bottom: 000000 20.0kV X20.0k 1.50um.</p>	 <p>SEM image showing a top view of a dome. The image includes technical data at the bottom: 000000 20.0kV X30.0k 1.00um.</p>
Cross Sectional View	 <p>SEM image showing a cross-sectional view of a cone. The image includes technical data at the bottom: 000000 20.0kV X30.0k 1.00um. Annotations show a height of 1.6884um and a base width of 2.5058um. An angle of 65.7° is also indicated.</p>	 <p>SEM image showing a cross-sectional view of a square pyramid. The image includes technical data at the bottom: 000000 20.0kV X30.0k 1.00um. Annotations show a height of 1.2261um and a base width of 1.8224um.</p>	 <p>SEM image showing a cross-sectional view of a dome. The image includes technical data at the bottom: 000000 20.0kV X30.0k 1.00um.</p>

Library of Standard Patterns

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- Large diameter substrate patterning capability
- Sub-micron patterning capability
- Tight dimensional tolerance
- Smallest edge exclusion zone – more usable area

- ❑ Currently available pattern dimensions
 - Pitch : 3 μm , 2 μm & 1.5 μm
 - Width : 1.3 ~ 2.8 μm
 - Height : 0.65 ~ 2.0 μm
 - Pitch under 1 μm available on demand
- ❑ Dimensional tolerance down to $\pm 0.1 \mu\text{m}$
- ❑ Edge exclusion down to 1 mm
- ❑ The table below shows some samples of the currently available standard patterns



Pitch	Width	Height
3	2.4	1.6
3	2.6	2.0
2	1.6	1.1
2	1.6	1.3
1.5	1.2	0.75

Unit :

Base Substrate Options

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- Diameter: 100, 150, 200 mm
- M-tilt: 0.0 to 0.5⁰, with tight tolerance ($\pm 0.03^0$)
- Global Flatness: GBIR, GFLR, GF3D etc.
- Site Flatness: SBIR, SFQR etc.
- Orientation Flat and Notch: SEMI, JEITA, or Custom
- Thickness: Standard or Custom
- Lasermark format : Standard or Custom