

CMP *Sim* 2.0

Sample Input

1. Slurry Agglomeration Limited by Reaction (RLA)
2. Slurry Agglomeration Limited by Diffusion (DLA)

RLA

PAD PARAMETERS

Int Mean Asperity Height	<input type="text" value="0"/>	<input <="" td="" type="button" value="?"/> <td>nm</td>	nm
Int Std Dev Asperity Height	<input type="text" value="15.625"/>	<input <="" td="" type="button" value="?"/> <td>nm</td>	nm
Skewness	<input type="text" value="-1.25"/>	<input <="" td="" type="button" value="?"/> <td></td>	
Kurtosis	<input type="text" value="6.875"/>	<input <="" td="" type="button" value="?"/> <td></td>	
Asperity Area Density	<input type="text" value="2E-04"/>	<input <="" td="" type="button" value="?"/> <td>1/um²</td>	1/um ²
Asperity Tip Curvature	<input type="text" value="2E-02"/>	<input <="" td="" type="button" value="?"/> <td>1/um²</td>	1/um ²
Young's Modulus of Pad	<input type="text" value="29E06"/>	<input <="" td="" type="button" value="?"/> <td>Pa</td>	Pa
Poisson's Ratio of Pad	<input type="text" value="0.4"/>	<input <="" td="" type="button" value="?"/> <td></td>	
Pad Wear Rate Coefficient	<input type="text" value="9.6E-09"/>	<input <="" td="" type="button" value="?"/> <td>um/Pa/sec</td>	um/Pa/sec
Asperity Wear Rate Coeff	<input type="text" value="1.5E-08"/>	<input <="" td="" type="button" value="?"/> <td>um/min/Pa</td>	um/min/Pa
Pad Bending Factor	<input type="text" value="0.55E12"/>	<input <="" td="" type="button" value="?"/> <td>N/m³</td>	N/m ³
Planarization Length	<input type="text" value="3000"/>	<input <="" td="" type="button" value="?"/> <td>um</td>	um
Pad Usage Since Last Conditioning	<input type="text" value="0"/>	<input <="" td="" type="button" value="?"/> <td>sec</td>	sec

Default Pad Parameters

Upload File

WAFER PARAMETERS

Hardness of Control Layer	<input type="text" value="4E09"/>	<input <="" td="" type="button" value="?"/> <td>Pa</td>	Pa
Young's Modulus of Wafer	<input type="text" value="70E09"/>	<input <="" td="" type="button" value="?"/> <td>Pa</td>	Pa
Mask Layout	<input type="text" value="MIT Mask (Default)"/>	<input type="button" value="v"/>	

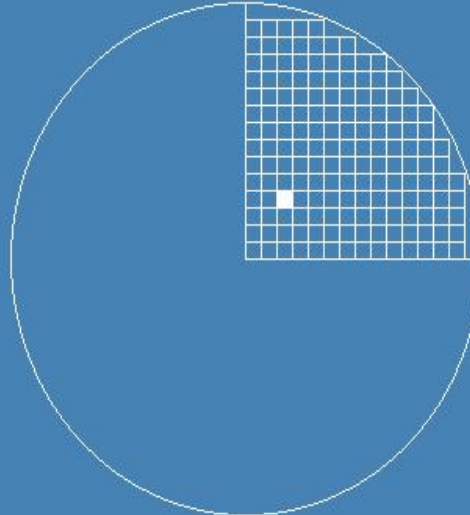
Default Wafer Parameters

Upload File

DIE POSITION

Wafer Diameter	<input type="text" value="300"/>	mm	<input type="button" value="ReDraw"/>
Die Size (W x L)	<input type="text" value="10"/>	<input type="text" value="10"/>	mm
X-Y Coordinate *	<input type="text" value="26"/>	<input type="text" value="34"/>	mm

* X- and Y- Coordinates are from wafer center



SLURRY PARAMETERS

Viscosity of Slurry	<input type="text" value="1E-03"/>	<input <="" td="" type="button" value="?"/> <td>Pa.s</td>	Pa.s
Temperature	<input type="text" value="300"/>	<input <="" td="" type="button" value="?"/> <td>K</td>	K
Slurry Particle Mean Dia	<input type="text" value="70"/>	<input <="" td="" type="button" value="?"/> <td>nm</td>	nm
Slurry Particle Std Dev Dia	<input type="text" value="10"/>	<input <="" td="" type="button" value="?"/> <td>nm</td>	nm
Particle Vol Concentration	<input type="text" value="1E-02"/>	<input <="" td="" type="button" value="?"/> <td>per Vol</td>	per Vol
pH of Slurry	<input type="text" value="7"/>	<input <="" td="" type="button" value="?"/> <td></td>	
Number of Species (n)	<input type="text" value="1"/>	<input <="" td="" type="button" value="?"/> <td><input type="button" value="Enter"/></td>	<input type="button" value="Enter"/>
n Valencies	<input type="text" value="1 1"/>		
n Concentrations	<input type="text" value="0.01"/>		moles/Litre
Particle Chemical Composition	<input type="text" value="Silica"/>	<input <="" td="" type="button" value="?"/> <td></td>	
Agglomeration Time	<input type="text" value="3600"/>	<input <="" td="" type="button" value="?"/> <td>sec</td>	sec

Default Slurry Parameters

Upload File

PROCESS PARAMETERS

Pressure	<input type="text" value="3.4E04"/>	<input <="" td="" type="button" value="?"/> <td>Pa</td>	Pa
Relative Velocity	<input type="text" value="0.6"/>	<input <="" td="" type="button" value="?"/> <td>m/s</td>	m/s
Angular Velocity of Wafer *	<input type="text"/>		rad/s
Angular Velocity of Platen *	<input type="text"/>		rad/s
Eccentricity of Platen *	<input type="text"/>		m

* These parameters are required unless relative velocity is provided.

Default Process Parameters

Upload File

UPLOAD ALL PARAMETER FILES

SAVE & SUBMIT LATER

SUBMIT FOR PROCESSING

DLA

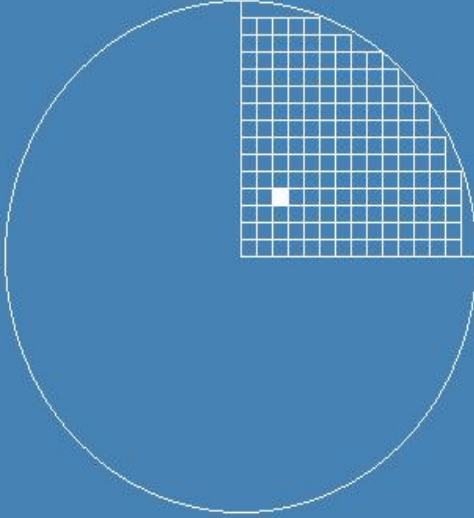
PAD PARAMETERS

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Kurtosis	<input type="text" value="6.875"/>	<input <="" input="" type="button" value="?"/>	
Asperity Area Density	<input type="text" value="2E-04"/>	<input <="" input="" type="button" value="?"/>	1/ μm^2
Asperity Tip Curvature	<input type="text" value="2E-02"/>	<input <="" input="" type="button" value="?"/>	1/ μm^2
Young's Modulus of Pad	<input type="text" value="29E06"/>	<input <="" input="" type="button" value="?"/>	Pa
Poisson's Ratio of Pad	<input type="text" value="0.4"/>	<input <="" input="" type="button" value="?"/>	
Pad Wear Rate Coefficient	<input type="text" value="9.6E-09"/>	<input <="" input="" type="button" value="?"/>	$\mu\text{m}/\text{Pa}/\text{sec}$
Asperity Wear Rate Coeff	<input type="text" value="1.5E-08"/>	<input <="" input="" type="button" value="?"/>	$\mu\text{m}/\text{min}/\text{Pa}$
Pad Bending Factor	<input type="text" value="0.55E12"/>	<input <="" input="" type="button" value="?"/>	N/m^3
Planarization Length	<input type="text" value="3000"/>	<input <="" input="" type="button" value="?"/>	μm
Pad Usage Since Last Conditioning	<input type="text" value="0"/>	<input <="" input="" type="button" value="?"/>	sec

DIE POSITION

Wafer Diameter	<input type="text" value="300"/>	mm	<input type="button" value="ReDraw"/>
Die Size (W x L)	<input type="text" value="10"/>	<input type="text" value="10"/>	mm
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SLURRY PARAMETERS

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Slurry Particle Std Dev Dia	<input type="text" value="10"/>	<input <="" input="" type="button" value="?"/>	nm
Particle Vol Concentration	<input type="text" value="1E-02"/>	<input <="" input="" type="button" value="?"/>	per Vol
pH of Slurry	<input type="text" value="3"/>	<input <="" input="" type="button" value="?"/>	
Number of Species (n)	<input type="text" value="1"/>	<input <="" input="" type="button" value="?"/>	<input type="button" value="Enter"/>
n Valencies	<input type="text" value="1 1"/>		
n Concentrations	<input type="text" value="0.01"/>		moles/Litre
Particle Chemical Composition	<input type="text" value="Silica"/>	<input <="" input="" type="button" value="?"/>	
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PROCESS PARAMETERS

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Relative Velocity	<input type="text" value="0.6"/>	<input <="" input="" type="button" value="?"/>	m/s
Angular Velocity of Wafer *	<input type="text"/>		rad/s
Angular Velocity of Platen *	<input type="text"/>		rad/s
Eccentricity of Platen *	<input type="text"/>		m

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