

TRACER

What's new TRACER 2.9

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Negative Resist Process Calibration

Calibratio	on						×					
Data												
Na <u>m</u> e:	test				^	Preconditions for the TRACER Calibration include: 1. An analytic PSF or a PSF from the archive 2. A Dose vs. Density table obtained by exposing and evaluating a PEC corrected density varying pattern, obtainable from GenISys. 3. Resist contrast value.						
<u>D</u> escription:					~		~					
PSF param	eter for calibration											
🔾 Use ana	lytical PSF	6010	A Flore	0.77								
	Beta [nm]:	0918		0.77	▼							
Ga	Gamma [nm]: 0 × Nu: 0.00 ×											
Use PSF from archive 2D-PSF; Substrate_Si_Thickness_700000_Energy_50_Layers_Resist_PMMA 200 nm_Z-Position_0.09_Electrons_2000000_Alpha_0_Beta_0_Eta_0_Gamma1_0_N Archive												
Optimal c	ontrast [%]:	100	• /	0	🔹 : Unifo	orm clearing [%]						
Calibrated	model											
Resist-negative Resist contrast: 2.50 Thickness [nm]: 200 D0 [uC/cm^2]: 500.00 From CC Threshold Resist-negative fit term												
Data Prop	perties											
Proxim	nity Effect Correction	applied 🔾	No Proximity	Effect Correction	applied							
	A	В	С	D	E	E F	^ <u>A</u> dd Dose					
1	Target CD [nm]	300	300	300	300	300	Add Data <u>s</u> et					
2	Density [%]	0.000	25.000	50.000	75,000	100.000						

• The E-Beam process calibration now supports the calibration of negative resists.

• Calibration is available for both positive and negative resists.



Mid-range Contribution in Process Calibration



 In E-Beam process calibration, the mid-range as well as its weight is now available to be either manually fixed or optimized for a later refit.

• The calibration accuracy is enhanced for process with a non-negligible midrange effect.



Calibration for Data without PEC

Calibratio	on							×	:				
Data													
Name:	Test				Precon 1. An au 2. A Do varying 3. Resis	Preconditions for the TRACER Calibration include: 1. An analytic PSF or a PSF from the archive 2. A Dose vs. Density table obtained by exposing and evaluating a PEC corrected density varying pattern, obtainable from GenlSys. 3. Resist contrast value.							
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1	Target CD [nm]	300	300	300	300	300		Add Dataset					
2	Density [%]	0.000	25.000	50.000	75.000	100.000		Remove					
3	Dose [uC/cm^2]	Mea. CD [nm]	Mea. CD [nm]	Mea. CD [nm]	Mea. CD [nm]	Mea. CD [nm]		nemore					
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5	102.5	296.1	298.91	297.77	296.3	288.65	-						
6	107.5	296.6	298.39	299.04	300.78	297.51		Export					
7	112.5	303.27	310.23	312.93	315.06	310.85							
8	117.5	304.15	310.36	316	321.81	315.76							
9	125	302.1	309.88	322.24	323.45	319.68							
10	130	308.02	316.52	327.14	331.92	327.62							

- The E-Beam process calibration now also supports calibrations on measurements made on exposure data without PEC.
 - The existing exposure without PEC can be imported for calibration.



Add Electrons to an Existing Simulation



 Right click on the existing PSF simulation result and "Add electrons..." is used to add more electrons in Monto-Carlo simulation.

> The PSF accuracy of existing simulation is enhanced by adding more electrons



Filtering and Sorting in Archives

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- In 3D-PSF, 2D-PSF and Material Archive, a Filter is available for quick searching.
- By clicking on the column name, the table entries can be sorted.



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Rename Calibrated PSF

- The calibrated PSF can be stored in an Archive, which is accessible in the "Calibration" Tab.
- A right-click on selected calibration can rename the Tag of the PSF for user conveniency.