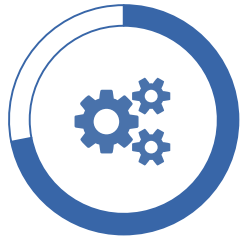






Easy-to-use Reactive Ion Etching equipment



Wide process range for Si, silicon-based compounds, metals and Polymers



Rapid substrate loading and unloading



Smaller wafer pieces up to full 200 mm wafer
1x2" to 7x2" ; 1x3" to 3x3"
; 1x4" ; 1x6" ; 1x8"



SYSTEM DESCRIPTION

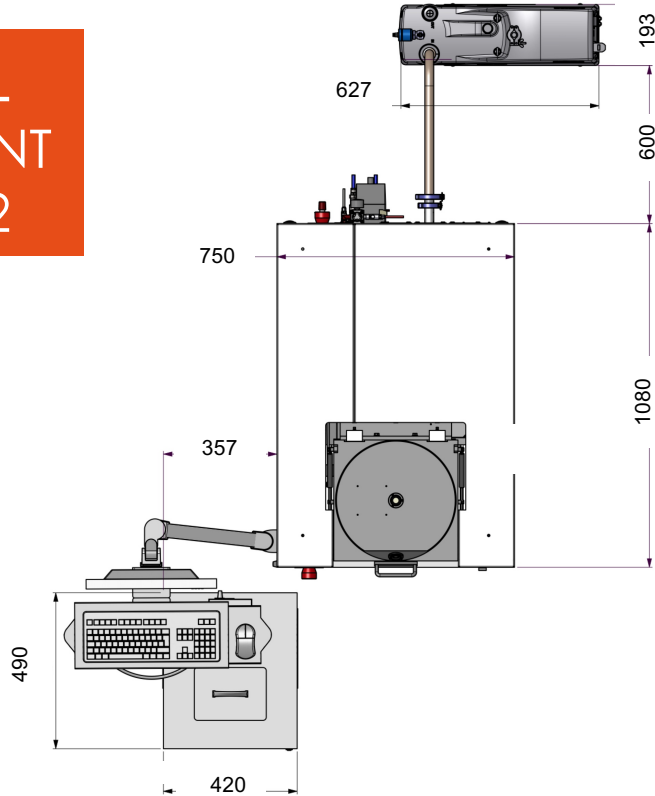
CORIAL 200S



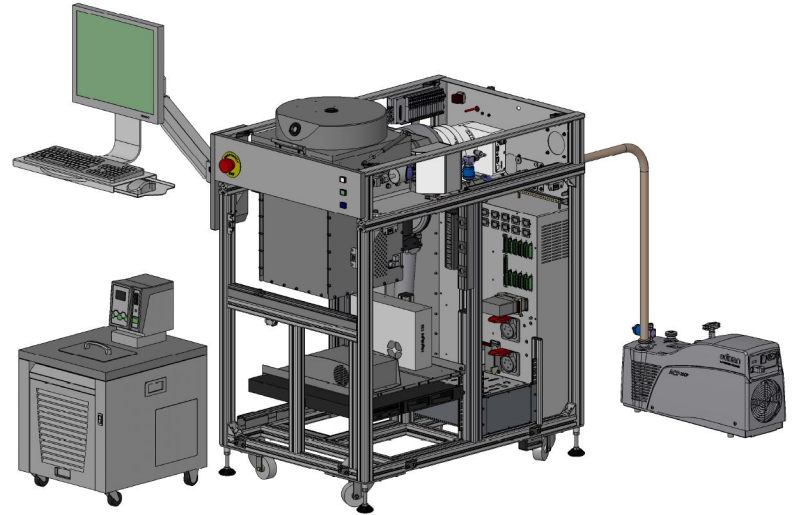
SYSTEM DESCRIPTION

General View

SMALL
FOOTPRINT
0.81 m²



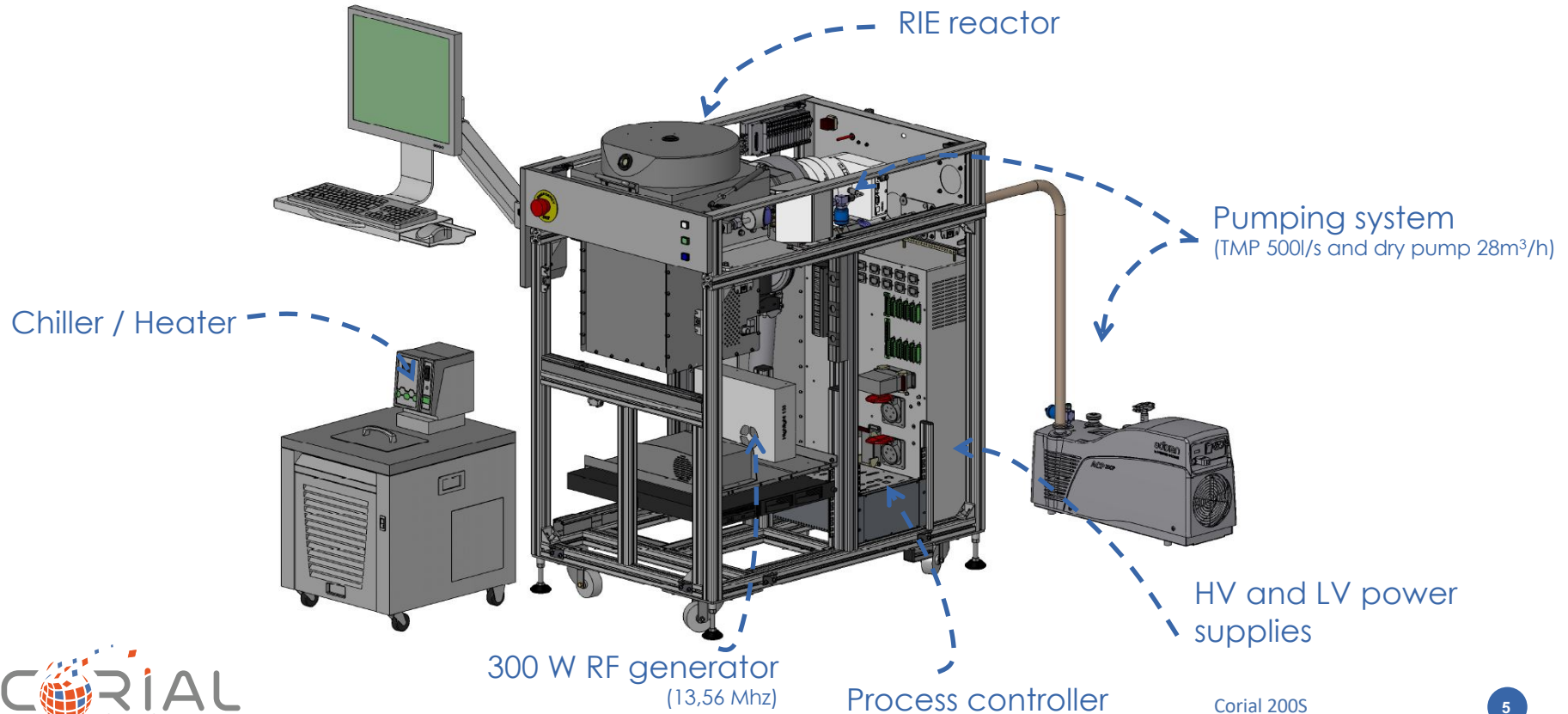
Low CoO





SYSTEM DESCRIPTION

Detailed View

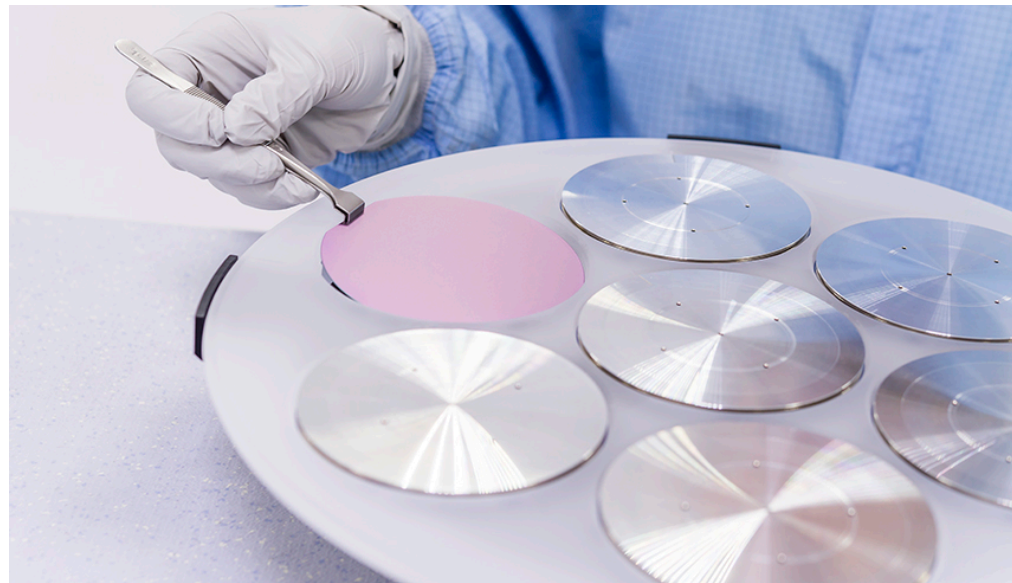




SYSTEM DESCRIPTION

7/19/18

Loading



< 210 s

LOADING TIME

Direct loading

FAST LOAD AND UNLOAD

Shuttle

EASY EXCHANGE BETWEEN SUBSTRATE SHAPE AND SIZE

STANDARD RIE SOURCE CORIAL 200S



RIE SOURCE

Easy-to-use

For fluorine-based etch processes



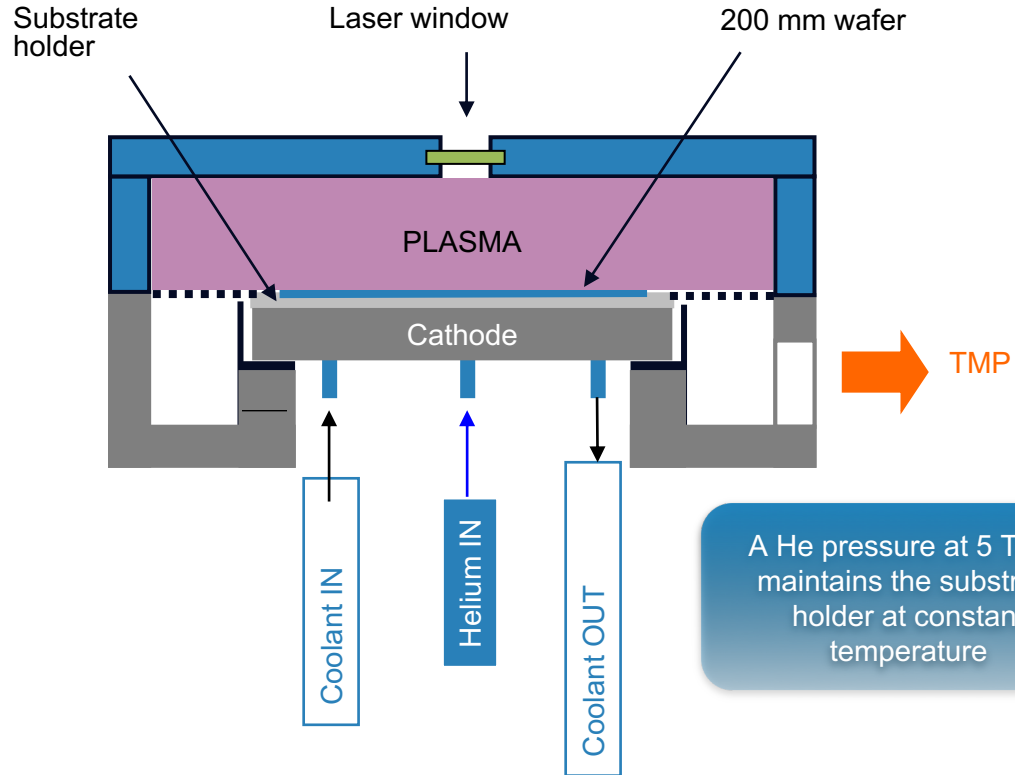
1. Excellent process control enabled by efficient substrate cooling
2. Retractable liner for sputter-etch increase time between cleans and reduce clean time
3. shuttle (carrier) design, combined with a standard cathode, for a cost-effective and fast reactor adaptation, suitable for multiple applications and substrate types
4. Minimized maintenance

SiO₂ 50 nm/min
Si₃N₄ 60 nm/min
Nb 100 nm/min



RIE SOURCE

Operation Sequence

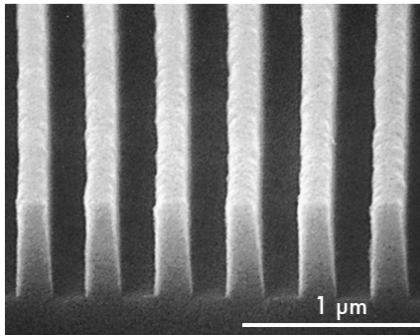


A He pressure at 5 Torrs maintains the substrate holder at constant temperature

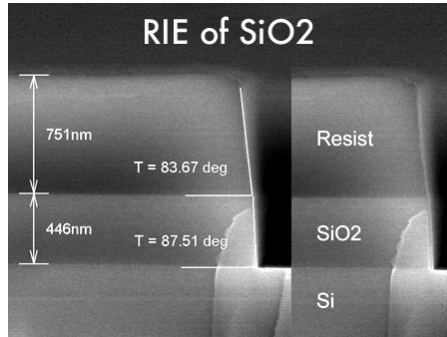
PERFORMANCES RIE PROCESSES CORIAL 200S



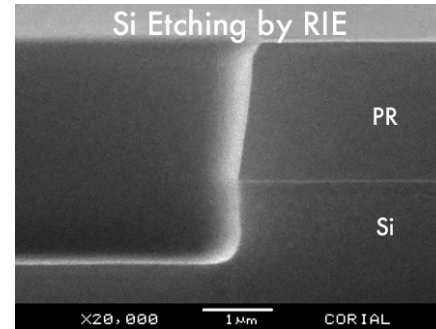
Fluorinated chemistry



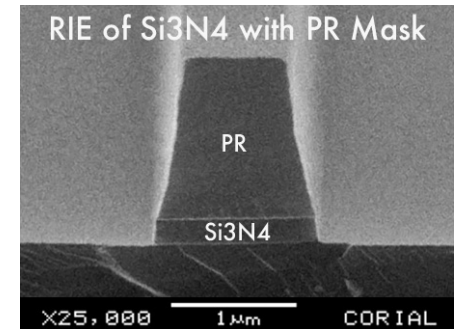
RIE of SiO₂ with PR mask –
Vertical profile – High etch
uniformity



RIE of SiO₂ with PR mask – 0.8 μm
deep



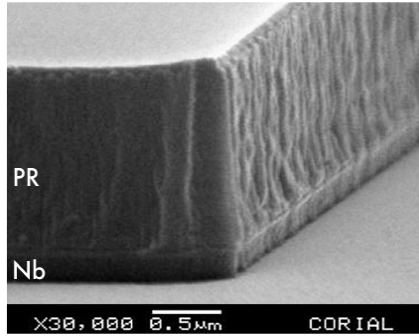
RIE of Si – 0.8 μm deep -
Anisotropic profile



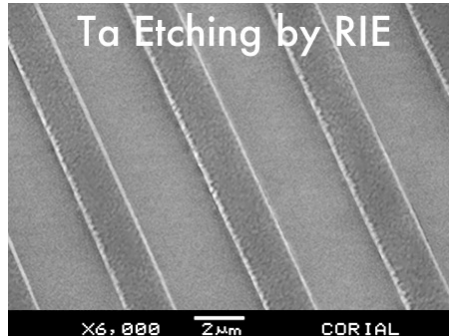
RIE of Si₃N₄ - 0.8 μm deep



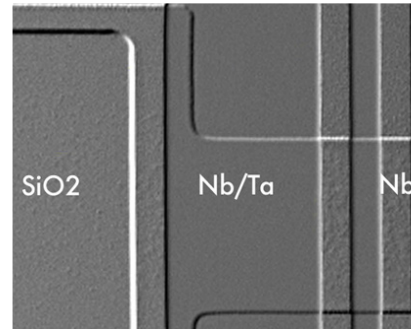
Fluorinated chemistry



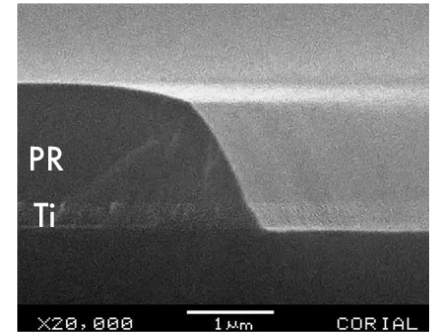
Nb Etching with PR mask –
Anisotropic profile



Ta Etching with PR mask –
Anisotropic profile



RIE of Nb / Ta



Ti Etching with PR mask -
Anisotropic profile



HIGH ETCH RATES

Excellent Uniformities

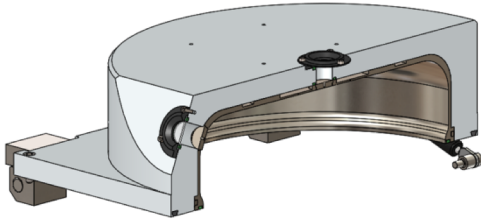
Process	Mask	Etch rate (nm/min)	Selectivity (vs mask)	Uniformity (across wafer)
Polymers	PR	400	1	±5%
SiO ₂	PR	50	3	±3%
Si ₃ N ₄	PR	60	> 2	±3%
Si	PR	100	1	±5%
Nb	PR	100	> 0.5	±5%
Ta	PR	90	> 0.5	±5%
Ti	PR	25	0.3	±5%

RIE SOURCE FOR SPUTTER-ETCH CORIAL 200S




SPUTTER-ETCH

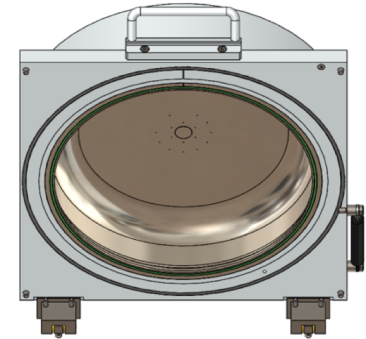
RIE Process Chamber for Etching and Sputtering



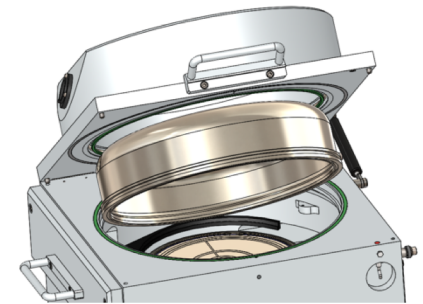
LINER TO COLLECT ETCH-BY-PRODUCTS AND SPUTTERED MATERIALS



EASY LINER replacement by a single person



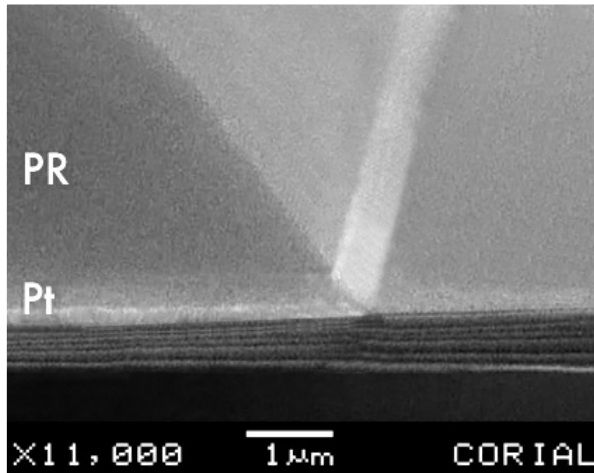
Dedicated process chamber for
 Au, Ag, Ni, Fe, Co,
 Pt, PZT...
 SPUTTERING





SPUTTER ETCH

Ar chemistry



Back sputtering of Pt with PR mask

Process	Mask	Etch rate (nm/min)	Selectivity (vs mask)	Uniformity (across wafer)
Au, Pt, PZT, Fe, Co	PR	45	> 1	±5%

SHUTTLE HOLDING APPROACH CORIAL 200S

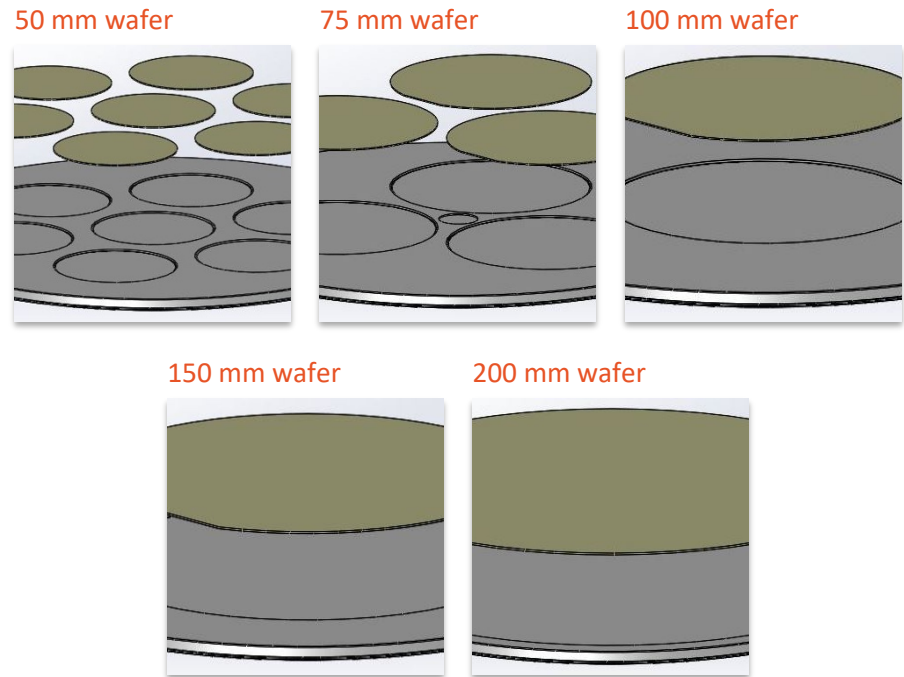
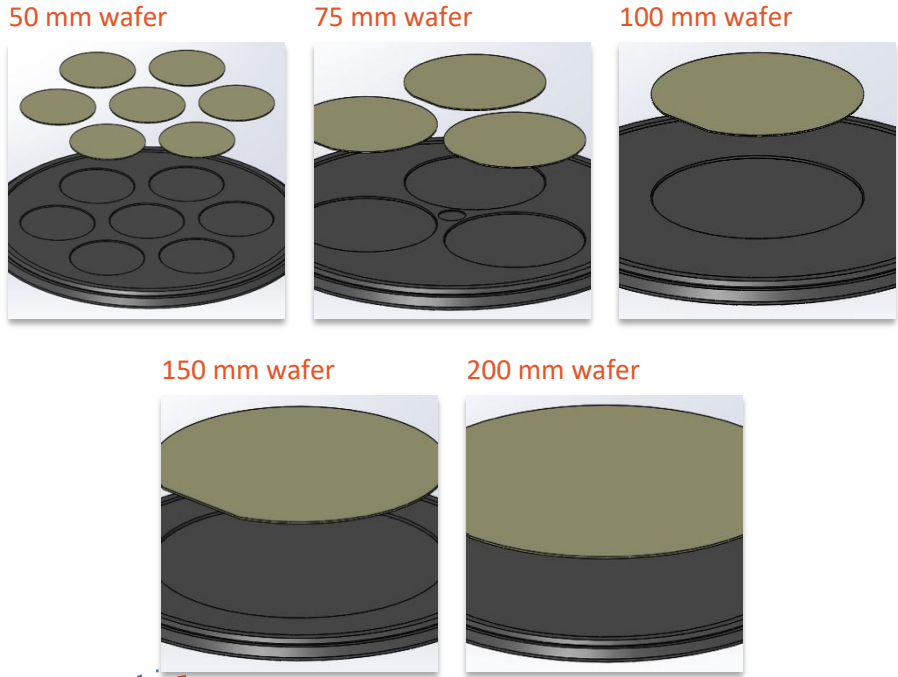


SHUTTLE HOLDING APPROACH

Portfolio

NG20 wafer carrier

NQ200 wafer carrier

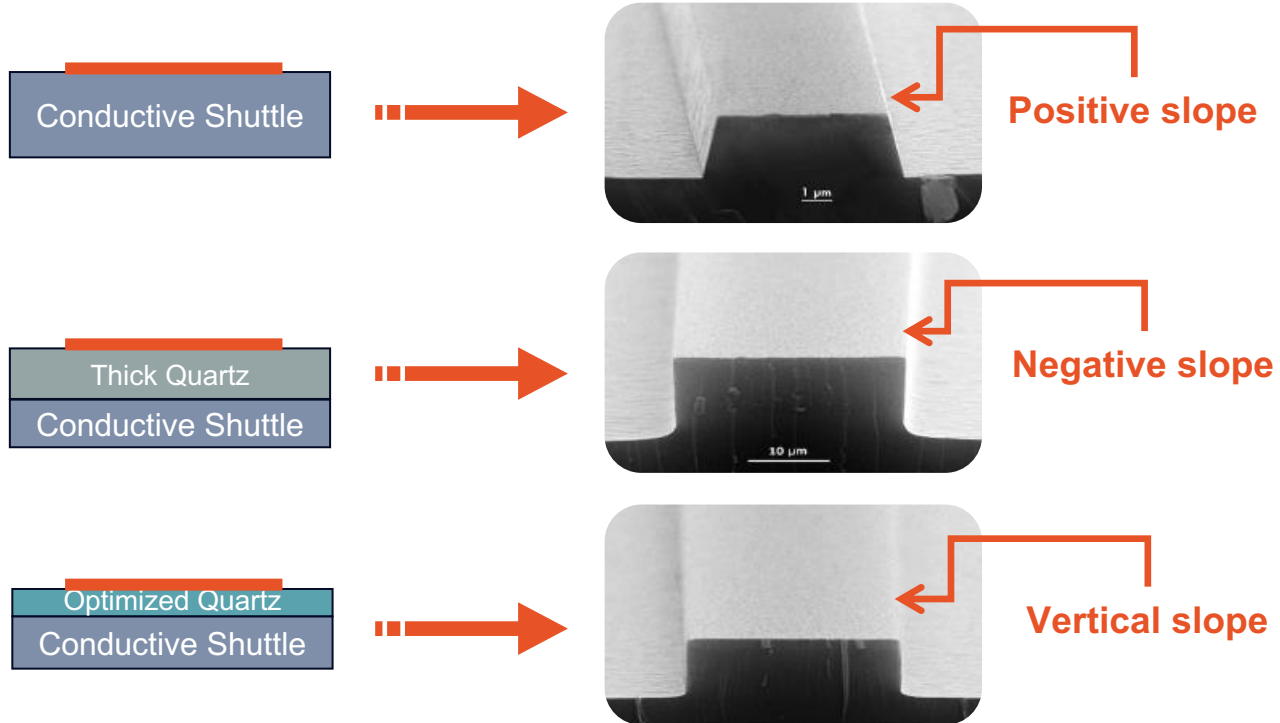




SHUTTLE HOLDING APPROACH

Impact on Performances

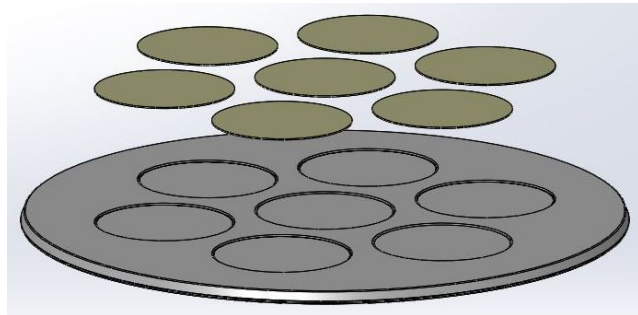
SiO₂ etching with aSi-H mask





SHUTTLE HOLDING APPROACH

Benefits



1. Quick adaptation to sample shape and size
2. Optimum process conditions with NO modification of process chamber
3. Limited cross contamination between processes by using dedicated shuttles

2''

Wafer carrier

USABILITY

CORIAL 200S



PROCESS CONTROL SOFTWARE

COSMA



The simplest, most efficient software to develop processes, operate, and maintain CORIAL systems



DESKTOP APPLICATION

Process Editing | Process Adjustment | Process Operation | Process Tracability | System Maintenance

REMOTE CONTROL



MOBILE APPLICATION

Module & Process Follow-Up | Alarms & Warnings
Connected Users





REPROCESSING SOFTWARE

7/19/18

COSMA RS



DISPLAY UP TO

4

PARAMETERS
FROM A RUN

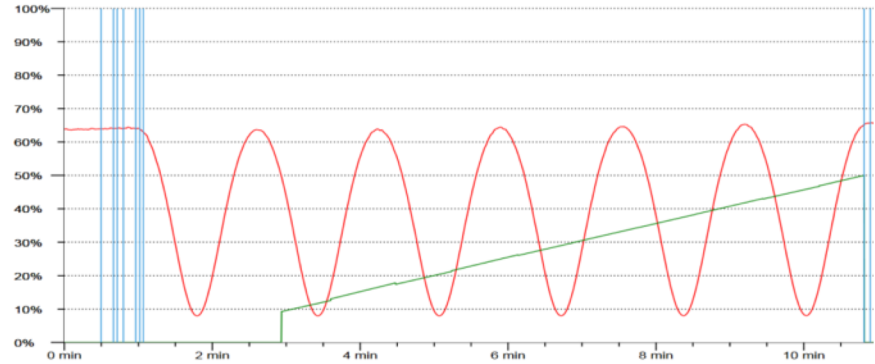
Simple and efficient
software to analyze process
runs and accelerate process
development

REMOTE
ANALYSIS OF RUNS

DRAG AND DROP

CURVES TO CHECK PROCESS
REPEATABILITY

END POINT DETECTION

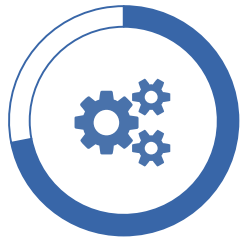


A CCD camera and laser diode, in the same measuring head, enables simultaneous visualization of the wafer surface and the laser beam impact on it. A 20 μm diameter laser spot facilitates the record of interference signals.

Real-Time etch rate measurement
Real-Time etched depth measurement



Easy-to-use Reactive Ion Etching equipment



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; 1x4" ; 1x6" ; 1x8"

