

Solutions for Failure Analysis



**200FA
200R
200I**



RIE, FOCALIZED PLASMA, ICPRIE SOLUTIONS

DIES | PACKAGED DIES | FULL WAFERS

Your partner in failure analysis. Today and Tomorrow.

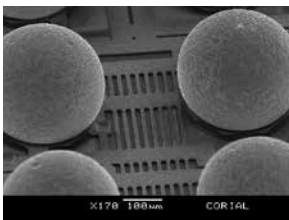
CORIAL is a leading provider of plasma etch solutions and equipment for failure analysis. Our systems are selected by the "Big 4" pure-play foundries and the FA labs of the top-5 fabless companies.

- More than 30 years experience in failure analysis
- Worldwide support through a global network of offices and agents
- Versatility & flexibility of equipment that grow in capability as you do

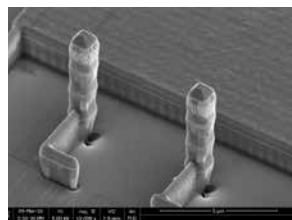
CORIAL Systems for Failure Analysis feature:

- Flexibility in process technology: RIE, HCD (Hollow Cathode Discharge, Focalized Plasma), ICPRIE.
- Flexibility in substrate size: dies, packaged dies, wafer fragments and full wafers.
- Flexibility in substrate handling: direct load, preloaded shuttle, or preloaded shuttle with load-lock.
- Flexibility in process optimization: choose chemistry, process temperature, end pointing according to your needs.

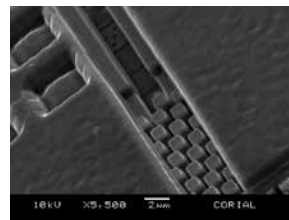
Depassivation & basic deprocessing for IC's



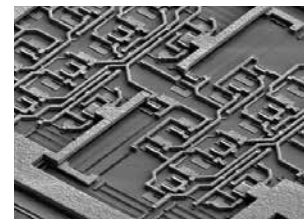
Polyimide depassivation



Anisotropic removal of dielectrics

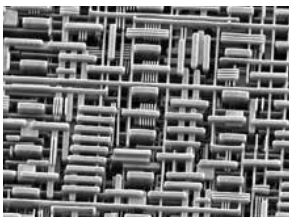


Al technology
4 metal layers

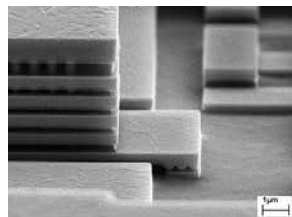


Deprocessing of GaAs IC

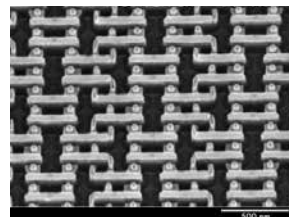
Copper technology / low-K dielectrics for advanced CMOS



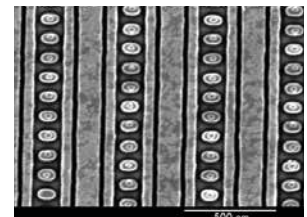
Cu technology
5 metal layers



Cu Technology
7 metal layers

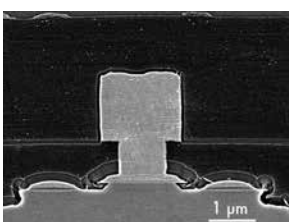


ILD Removal - 40 nm

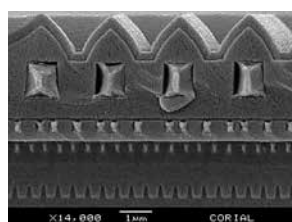


Ultra Low K removal
(20 nm)

Delineation (reveal) for fast stack characterization



Microsection after
layer reveal



Microsection for
layer reveal



A large scope of deprocessing technologies

- RIE for economical deprocessing of single dies and wafers.
- HCD for fast deprocessing of dies and packaged dies with high-density focalized plasma.
- ICPRIE for fast etching of all dielectric materials and metals featuring vast options of process adjustment.

Various substrate options

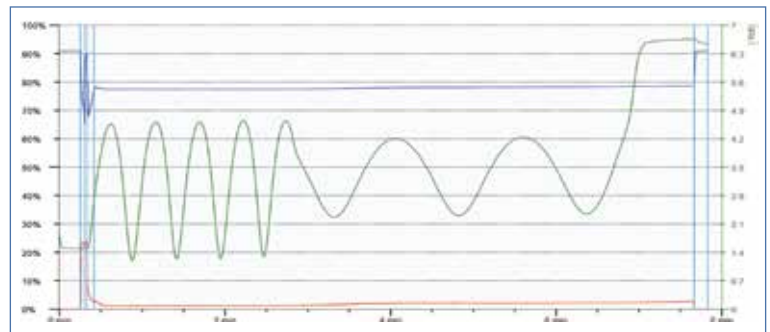
CORIAL systems allow for deprocessing of dies, packaged dies, wafer fragment(s) and full wafers up to 200 mm with or without He backside cooling.

In-situ end point capability

Laser interferometry for real-time control end precise endpoint determination. End pointing is fully integrated in system software.

Upgradeability

CORIAL Failure Analysis systems are field upgradable. Possible upgrades include additional gas lines, loadlock or ICP source (availability depends on the tool).



CORIAL Failure Analysis Systems Selection Guide

System	200FA	200R	200I
Technology	RIE, HCD	RIE, HCD	RIE, HCD, ICPRIE
Loading capacity	Die, wafer fragments	Die, packaged die, wafer up to 200 mm	Die, packaged die, wafer up to 200 mm
Substrate handling	Direct load	Preloaded carrier	Preloaded carrier
Dielectric etch / Low-K dielectric etch / Polymer decapsulation	■ ■ ■ / - / ■ ■ ■	■ ■ ■ / □ / ■ ■ ■	■ ■ ■ / ■ ■ ■ / ■ ■ ■
SiN / SiO ₂ reveal	■ ■ ■ / ■ ■ ■	■ ■ ■ / ■ ■ ■	■ ■ ■ / ■ ■ ■
Metal etching with Fluorinated / Chlorinated chemistry	□ / -	■ ■ ■ / □ (option)	■ ■ ■ / □ (option)
Cathode temperature / He backside	+20°C / NO	+5...+80°C / YES	+5...+80°C / YES
Pumping	Mechanical pump	TMP / Dry backing pump	TMP / Dry backing pump
Gas cabinet	Standard 4 gas lines	Up to 8 gas lines (all N ₂ purged)	Up to 8 gas lines (all N ₂ purged)
Endpointing	Laser interferometry	Laser interferometry	Laser interferometry
Upgrade potential Gas lines / Loadlock / ICP	YES/NO/NO	YES (incl. chlorinated)/YES/YES	YES (incl. chlorinated)/YES/-

■ ■ ■ Preferred application □ Possible application - Not applicable

Global Failure Analysis CORIAL / Plasma-Therm Install Base



About us

With more than 30 years experience in delivering custom plasma deposition and etch systems, the CORIAL management and its team is based at Grenoble, just 1 hour away from the international airport of Geneva.

We design, build and test standard or custom platforms according to customer request. Contact us to hear about the latest updates on our products, services and global network.

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