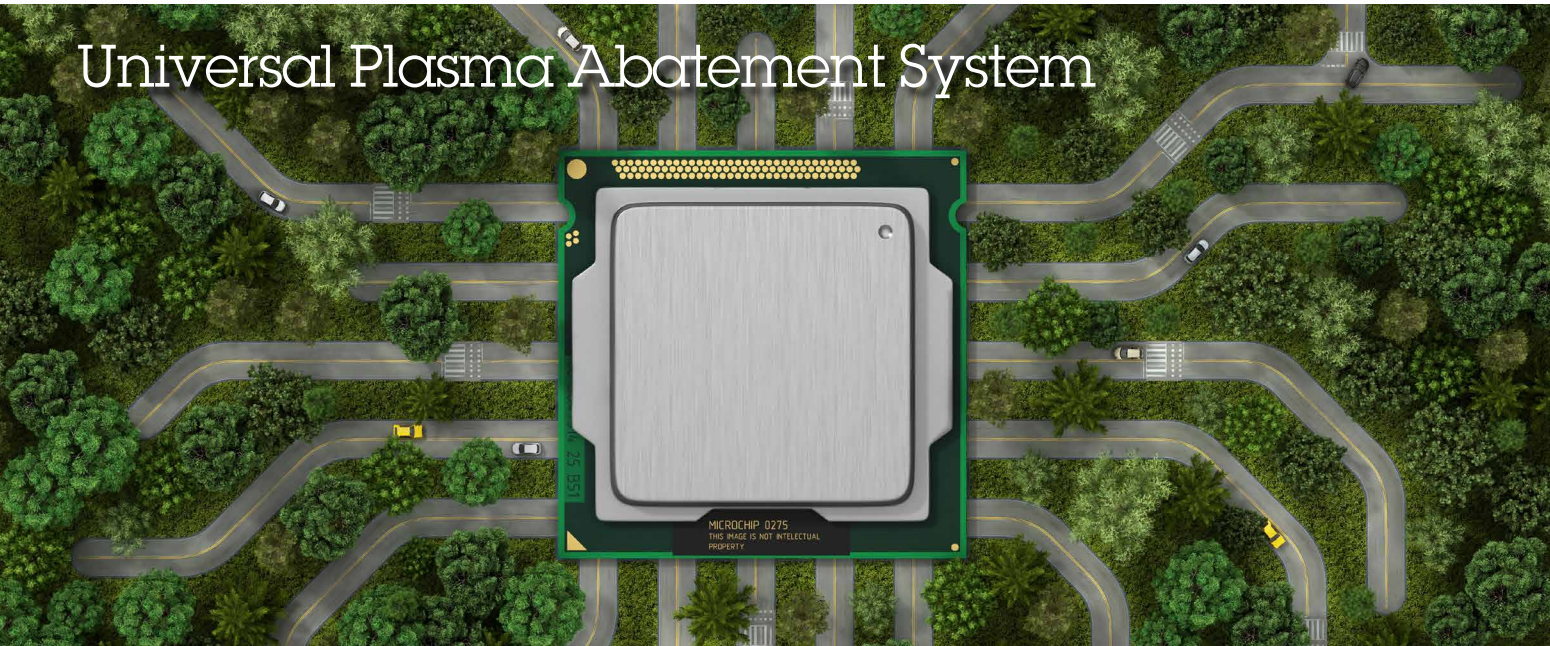


UPAS

Universal Plasma Abatement System



Unique and innovative post-pump solution for the abatement of high-GWP* PerFluorinated Compounds (PFCs) and Hydrofluorocarbons (HFCs) emitted by etching processes, **UPAS significantly reduces Scope 1 CO₂ equivalent emissions.**

Key benefits

⊕ High efficiency

Higher PFC/HFC Destruction and Removal Efficiency (DRE) even for difficult to abate gases:

- > 95% DRE of SF₆ and CF₄
- > 99% DRE of other PFCs

⊕ Savings

Lower consumables usage compared to burner scrubber technologies:

- No fossil fuels needed nor O₂
- Saving of 2 m³ water/day/chamber and lesser flow of effluents for wastewater treatment

⊕ Smaller footprint

Compared to a burner/scrubber technology, UPAS can be easily integrated in existing fab.

⊕ Low maintenance

Only once a year.

* GWP: Global Warming Potential



Winner of the
"Eurosemi IC Industry
Awards" in 2005

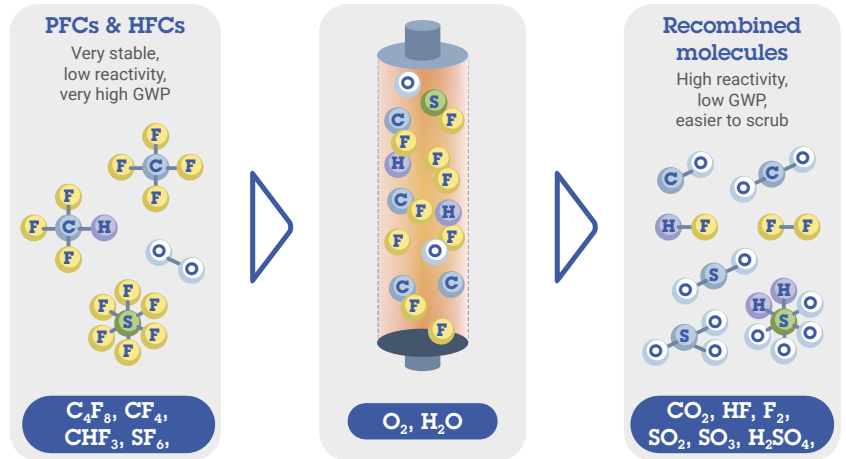


Operating principle

Air Liquide's atmospheric pressure plasma abatement system converts stable fluorinated gases, PFCs and HFCs, emitted from silicon/silicon oxide/poly etch processes into easily wet scrubbed compounds dramatically decreasing the carbon footprint of the etch process.

The very high electron temperatures (6,000°C) achieved in the microwave plasma leads to high PFC and HFC disassociation rates, and therefore high removal rates.

UPAS can manage up to 4 tools' exhausts.



Technical characteristics

Maximum total flow rate	120 slpm
Minimum total flow rate	20 slpm
Abatement SF ₆	> 95% (GWP 24,300 ⁽¹⁾ ; lifetime 3,200 years)
Abatement CF ₄	> 95% (GWP 7,380 ⁽¹⁾ ; lifetime 50,000 years)
Abatement other PFC	> 99%
Dimensions (L x W x H)	0.84 m x 0.625 m x 1.9 m
Uptime	> 99.5%
MTBPM ⁽²⁾	> 4,000 h to 20,000 h
MTTR ⁽³⁾	< 2 h
Certification	CE mark, SEMI standards compliant
Utilities (for the UPAS Full Wet version)	<ul style="list-style-type: none"> • Three-phase: 14 A, 11 kW (peak), 50/60 Hz; 380-415 V (208 V optional) • Single phase: 7 A; 1.6 kW (peak); 50/60 Hz; 230 V (110 V optional) • DI water: 2 l/day; cooling water: 6 lpm reusable; tap water: 3 lpm for on-board wet scrubber • Nitrogen, CDA, argon, vacuum exhaust of the cabinet. • PLC based technology with colour touch screen • Ethernet communication port for SCADA monitoring

⁽¹⁾ From Regulation (EU) 2024/573 of 7 February 2024 on fluorinated greenhouse gases

⁽²⁾ MTBPM: Mean Time Between Preventive Maintenance

⁽³⁾ MTTR: Mean Time To Repair

UPAS range

- UPAS Dry
- UPAS Wet
- UPAS Full Wet

Services

- Technical assistance
- Preventive and curative maintenance
- Spare parts
- Training

Contacts

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