User updates

Planned Cleanroom Upgrades and Closures

June 2020

Background

Why are we upgrading the cleanroom?

ANFF

1. To improve current lithography processes

We are introducing:

- A new high-resolution, fast maskless lithography/direct write system
- A new spin coating system with dynamic resist dispensing and integrated HMDS priming process
- New fumehoods for more streamlined wafer cleaning and processing
- A dedicated station for SU8 resist processing

2. To introduce new etching processes

These include:

- Dry HF vapour etching
- XeF_2 etching

Addition 1

Direct Laser Writer

Key benefits to you:

- Faster direct exposure than current systems at ANFF-Q
- Higher resolution than current systems at ANFF-Q
- Rapid alignment capability
- High aspect ratio features
- Grey scale lithography

Addition 2

Sawatec Spin Coater/Hot Plate/HMDS Prime

Key benefits to you:

- Automated resist dispense
- Built-in hot plate for baking and HMDS priming
- User-friendly configuration and quick start for repeat processes
- More info HERE

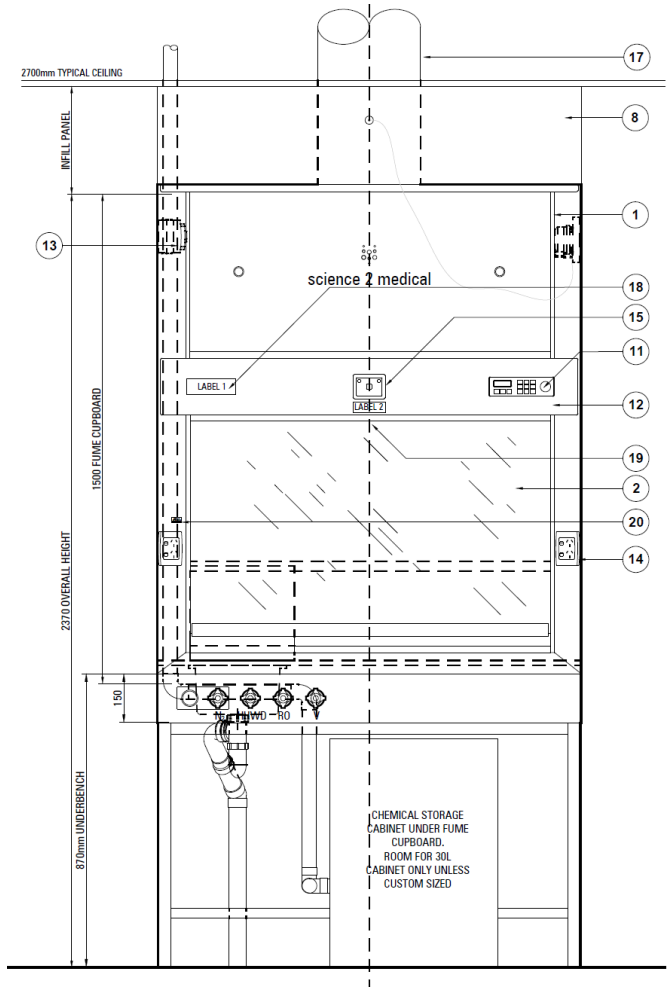
Addition 3

New Science 2 Medical Fumehoods

Key benefits to you:

- A new ***Corrosives Fumehood*** for
  - Wet etching (a brand new KOH bath, Piranha cleaning, aqueous HF, metal etching, resist development)
  - Dry vapour etching (a brand new HF vapour etcher)
  - Integrated metal lift-off process

- A new ***Flammables Fumehood*** for
  - General wafer cleaning (acetone, IPA)
  - SU8 resist development (PGMEA)



Addition 4

SPTS Xactix e2 XeF_2 Etcher

Key benefits to you:

- Increased process flexibility
- Great for small sample etch
- Increased SiN and SiO2 selectivity
- More info HERE

Addition 5

Idonus HF Vapour Etcher

Key benefits to you:

- Safer HF etching process
- Minimal exposure to liquid HF
- Etch rate adjustable with wafer temperature (35°C to 60°C)
- More info HERE

Current cleanroom layout

Impacted tools highlighted in red.

1	TARDIS spin coat and hotplate	**6**	XeF_2 etcher
2	SU8 fume cupboard	**7**	Wafer spin rinse dryer
3	Dektak profiler	**8**	Wet bench
4	EVG mask aligner	**9**	General purpose fume cupboard
5	EVG hot embosser		

New cleanroom layout

New or moved tools highlighted in green. Brand new equipment marked with an *.

1	EVG mask aligner	**6***	Sawatec spin coater/hot plate/HMDS
2	EVG hot embosser	**7***	New flammables fumehood
3	SU8 processing station	**8***	New corrosives fumehood + HF vapour etcher
4*	Direct laser writer	**9***	XeF_2 etcher
5	Wafer spin rinse dryer	**10**	Dektak profiler

Prepared by Nick Hong Seng Lee and Doug Mair

Tentative timeline

Phase 1 (8 – 14 June)
- Removal of old fumehoods
- Reconfiguration of gas lines for new equipment

Phase 2 (15 – 21 June)
- Installation and commissioning of new Science2Medical fumehoods and HF vapour etcher

Phase 3 (starting 22 June)
- Installation and commissioning of Sawatec spin coating system and SPTS XeF_2 etcher

Phase 4 (TBC)
- Removal of TARDIS spin coater and SU8 fume cupboard

Phase 5 (TBC)
- Relocation and re-commissioning of EVG hot embosser and mask aligner

Phase 6 (TBC)
- Installation and commissioning of direct laser writer

X *Cleanroom will be unavailable to users during this time. Please note that dates are subject to change.*

Questions?

Contact us

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