

Why Microfluidics?

- ✓ Significant cost savings due to smaller sample sizes and reagent volume requirements
- ✓ The ability to closely mimic a cell's natural micro environment
- ✓ Multiple analytes can be processed simultaneously
- ✓ Ideal for highly automated processes
- ✓ Applicable in various disciplines

How to include Microfluidics in your research?

By fabricating Lab-on-chip devices using SU-8 photoresist Microfabrication techniques to fabricate micro-mold for printing PDMS-based microchips

Not interested in Microfluidics?

Microfabrication technology can be used for different applications such as :

- ✓ Organ-on-chip
- ✓ Sensor and actuators
- ✓ Soft Lithography
- ✓ Packaging and Integration

What do I need to bring with me when using the facility?

You only need an idea and a design file with you.

For more information, please visit our page:

<https://www.imperial.ac.uk/bioengineering/about/facilities-and-services/>



About this facility



This facility offers a full range of services for prototyping SU-8 and PDMS micro-devices including a clean-lab. The user-friendly setup of the facility enables researchers from different disciplines to perform SU-8 photolithography and PDMS micro-chip casting with high resolution of 5 μm and broad thickness range from 5 μm to 250 μm . The training process is quick and you can use the facility after 2 days of training.

Key Equipment List

SU-8 Photolithography

- Mask Aligner, UV-KUB 3, KLOE
- Maskless UV printer, Smart Print-UV, Microlight
- Spin Coater, WS-650MZ Modular, Laurell

Characterisation and post process

- Automated Dispensing System, Omnia Aspirate Dispensing System, Biodot
- Optic profilometer, Profilm3d, ST Instruments
- Contact Angle Goniometer, Ossila

PDMS Micro-Chip

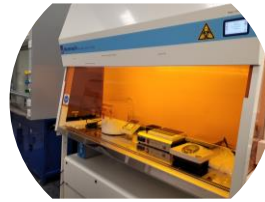
Fabrication

- Plasma Cleaner, PDC-002-CE, Harrick Plasma
- Handheld Plasma Wand, PZ2/PZ2-I, Piezobrush
- Mini oven, STZ 18, FALC Instruments

SU-8 station

The SU-8 station with state-of-art laminar hood can provide:

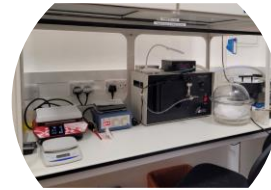
- Fabrication resolution of 5 μm
- 3" and 4" wafer coating
- 5 μm to 250 μm SU-8 coating
- Four programmable heat ramp steps



PDMS Station

The facility's PDMS station enables performing the whole soft lithography of PDMS process in a dust free environment including:

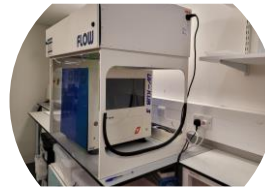
- Degassing
- Heat treatments
- Plasma bonding



Mask Aligner

The UV-KUB 3 is a new generation of compact mask aligner which can provide:

- Resolution of 1 μm
- Alignment accuracy of 1 μm
- Hard (physical) or soft (proximity) contact processes
- 100 numbers of programmable cycles



Automated Dispensing System

The Omnia is a precision motion platform designed for dispensing pL to nL volumes of reagent for various applications including:

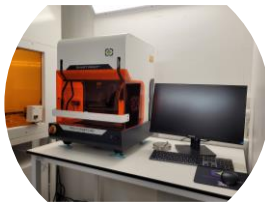
- Biosensor / Biochip
- Microarray
- DNA, Cell, Protein Dispensing
- Multiplex ELISA's
- Lab-on-a-Chip
- Low Volume PCR



Maskless UV Print

Smart Print UV is a multi-purpose maskless photolithography tool based on a UV light engine technology with excellent features including:

- 2D printing with high resolution of 1.5 μm
- Printing complicated geometries
- Printing on wide range SU-8 thicknesses
- Printing on different substrates
- User friendly software interface
- Alignment of several layers



Characterization Systems

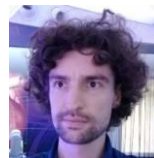
- The Profil3D Optical Profilometer: Non-aggressive access to surface topography
- The Ossila Contact Angle Goniometer
- The Olympus optical microscope equipped with camera

**Are you interested in our facility?
Please contact us**



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