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

For more information please visit:
www.imperial.ac.uk/bioengineering/about/facilities-and-services/

SCAN ME

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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 fluidic chip fabrication

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

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 thickness
- Four programmable heat ramp steps

Mask Aligner

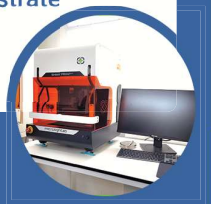
The UV-KUB 3 is a new generation of compact mask aligner which can provide:

- Resolution of 1 µm
- Alignment accuracy of 1 µm
- Hard (physical) or soft (proximity) contact processes
- Exposure by programmable UV LED

Maskless Photolithography

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

- Resolution of up to 1.5 µm
- Easy conversion from design to pattern
- Compatible with most photoresist
- Compatible with thick SU-8 layer
- Can be use on a wide variety of substrate
- Ideal for fast prototyping
- High precision layer-to-layer alignment



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

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

Characterization Systems

The Profilm3D Optical Profilometer:

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