

EDUCATIONAL PACKAGE

P/N: SEDUC-DROPLET

The Fluigent Educational Packages provide a broad introduction to microfluidics and its applications by familiarizing the user with general microfluidic principles and microfluidic systems.



DESIGNED TO OFFER A PERFECT LEARNING EXPERIENCE

- Complete microfluidic setup for starting experiments
- Flexible offer with 4 packages available
- Up to 4 hours practical work with solutions
- A handbook for an overview on microfluidics

These ready-to-teach packages are specifically handy for professors and teachers.

DESCRIPTION

- Educational Package - Full course - Co-flow, Resistance, Droplet:

Generate droplets and learn the main microfluidics concepts. Get the most complete overview, with experiments pushed to real-world applications, including droplet-based microfluidics.

Master two essential principles: co-flow and resistance. Visualize laminar flows and learn to apply hydrodynamic resistance to optimize experiments.

Suited for: (bio)engineers, chemical engineering, physicists, biologists and researchers
4 hours guided experiments.

The Package comes with a complete microfluidic setup, a theoretical handbook on microfluidics, lab work oriented experiments with corrections and accessories.

WHAT'S INCLUDED IN THE PACK?

Included in this package, you will find:

- A Therorical Handbook
- Accesories
- OxyGEN Software Control
- Digital Microscope
- Co-flow Microfluidic Setup
- Resistance Microfluidic Setup
- Droplet Microfluidic Setup

Experiments duration: 4 hours.

The theoretical handbook

The handbook is a **4 hours theory manual** that allows to give an **overview of microfluidic principles** and to introduce to the **main concepts of microfluidics**.

Introduction to microfluidics: History - applications


Microfluidic systems: Microfluidic chips - Flow controllers

Laminar flow: Laminar flow and diffusion definitions & theory – Mixing in microfluidics

Hydrodynamic resistance: Definition & Theory - Hydraulic-electric analogy

Droplet microfluidics: Droplet generation physics - Common droplet chip designs and generation regimes Surfactants - Particle(s) encapsulation

Going further: particle encapsulation: Poisson law for precise cell encapsulation - Example

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PRODUCT DATASHEET

Educational Package - Full course - Co-flow, Resistance, Droplets

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Content

1*LineUP SUPPLY KIT
 1*LINK
 2*Flow EZ 1000 mbar
 2*Flow unit M
 2* PCAP 15 mL
 3*Co-flow chip
 3*EZ Drop chip
 1* tubing & fitting kit
 1*Microscope with SD memory card
 1*dye solutions
 1*dSurf 2% 12 mL
 1*dOil 120 mL
 1*microbeads bottle
 1*OxyGEN Software – PC connection
 1* Printed handbook
 1*Exp. Leaflet Co-flow
 1*Exp. Leaflet Resistance
 1*Exp. Leaflet Droplet
 Accessories (tubing cutter, pen, notebook, counter, ruler ...)



Set-up overview

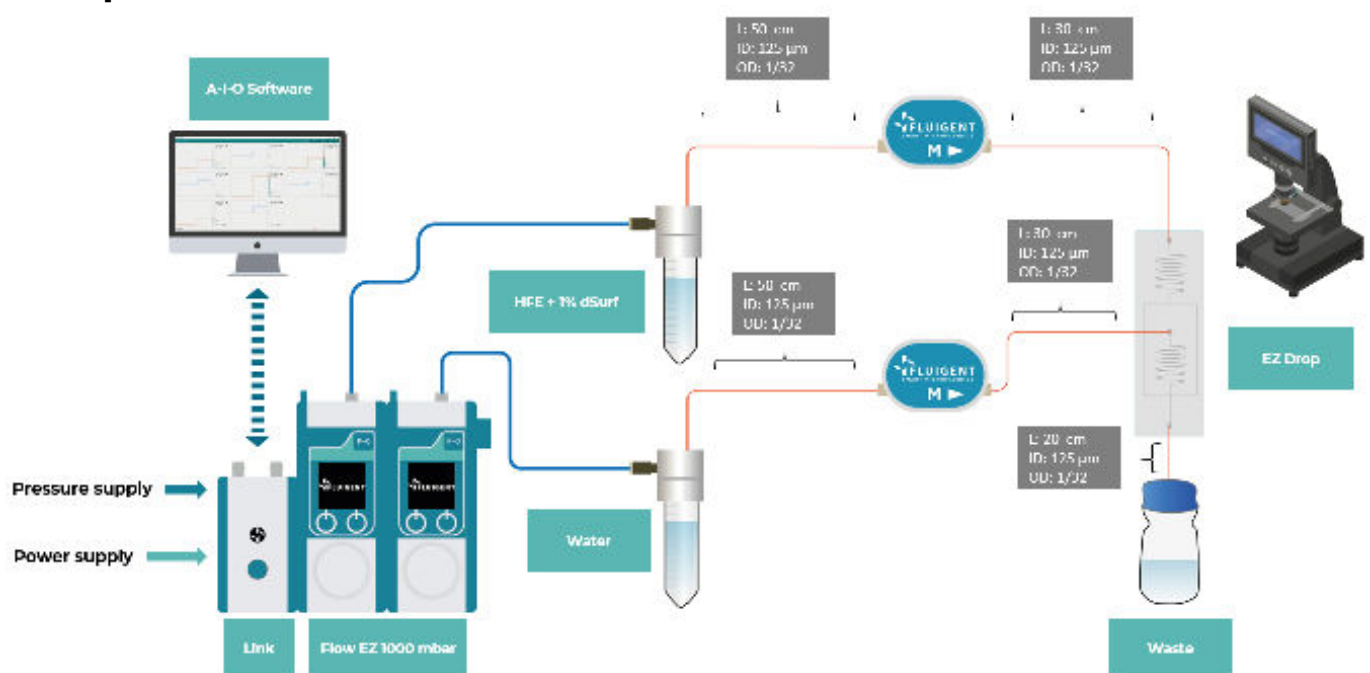


Figure: Set-up with the Educational Pack

SETTING-UP

Please refer to the Experimental leaflet.

TECHNICAL SPECIFICATIONS

Flow control	
Pressure controllers*	Fluigent Flow EZTM (1000 mbar)
Flow sensors*	Fluigent FLOW UNIT M

Droplet production*	
Dispersed phase	Distilled water
Continuous phase	dSurf (2% in 3M™ Novec™ 7500 fluorinated oil)
Droplet size range	15 µm to 100 µm diameter
Generation rate (frequency)	Up to 1 200 Hz
Coefficient of variation (CV)	2%

*Please visit www.fluigent.com for additional information

Fluid mixing	
Fluid 1	Blue dye
Fluid 2	Yellow dye

Imaging	
Microscope	BRESSER LCD Student Microscope 8.9cm (3.5")

Software	
Live control	Fluigent OxyGEN software