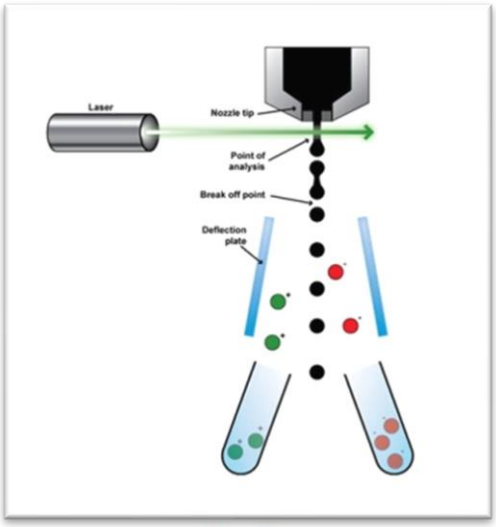
Flow Cytometer with Cell Sorter

Fluorescence-activated cell sorting (FACS) is a specialized type of flow cytometry. It provides a method for sorting a heterogeneous mixture of biological cells into two or more containers, one cell at a time, based upon the specific light scattering and fluorescent characteristics of each cell.

Interests are first labeled with an antibody which is individual for a particular cell surface molecule. Antibody is coupled to a fluorescent dye, like when in a narrow stream the individual cells pass a laser beam in single file, the fluorescence of each cell is measured.

A vibrating nozzle then forms small droplets which each containing a single cell which are given a negative or positive charge based on whether the cell they contain is fluorescing.

A strong electric field defects the various charged droplets into separate containers so that each container has a homogeneous population of cells eventually with respect to the cell surface molecule tagged along fluorescent antibody.



Detector

	Name	Filter	Mirror	Position
■	FSC	N/A	N/A	N/A
■	SSC	BP/488/15	ND/10/5	E
■	FITC	BP/527/32	LP/507/5	D
■	PE	BP/586/42	LP/560/5	C
■	PerCP	BP/700/54	LP/665/5	B
■	PE-Cy7	BP/783/56	LP/752/5	A
■	APC	BP/660/10	BP/660/10	B
■	APC-Cy7	BP/783/56	LP/752/5	A
■	V450	BP/448/45	BP/448/45	C
■	BV510	BP/528/45	LP/500/5	B
■	BV786	LP/755/5	LP/755/5	A

Key Applications

- **Cell cloning**
- **Chromosome sorting**
- **Genetic disease diagnosis**
- **Cancer stem cell analysis etc.,**

Technical Specification	
Detection	FSC, SSC, Up to 9 fluorescence detection channels with optional changeable filters
Absorbance/Excitation	488 nm, 640 nm, 405 nm, 561 nm
Excitation Wavelength	405 nm (Violet), 488 nm (Blue), 640-nm (Red)
Sensitivity	30 molecules of equivalent soluble fluorochrome PE (MESF-PE), 80 MESF-FITC (lower numbers indicate higher system sensitivity)
Resolution	Full peak coefficient of variation (FPCV) of < 3.0%
Yield & Purity	> 80% & > 98%
Throughput	10,000 cells/second; 40,000 events per second; 2-way sorting
Sample Type	1.5-, 2.0- and 5.0-mL tubes (two-way sorting); Up to 96-wells (one-way sorting)
Sample Volume Input	5 mL tubes; Two-way sorting: 1.5, 2.0 & 5.0-mL tubes One-way sorting: 6, 24, 48, 96 & 384-well plates, 96-well PCR tray
Flow Rate	34,000 drops/second
Software	BD FACS Chorus version 1.0 or later
Laser Type	Class 1 Laser Product per IEC/EN 60825-1.

Details of Flow Cytometer with Cell Sorter

Brand	**BD- Becton, Dickinson and Company, Singapore**
Model	**BD FACS Melody™ Sorter (661762)**
Sponsored Agency	**DST- PURSE programme (Phase -2)**