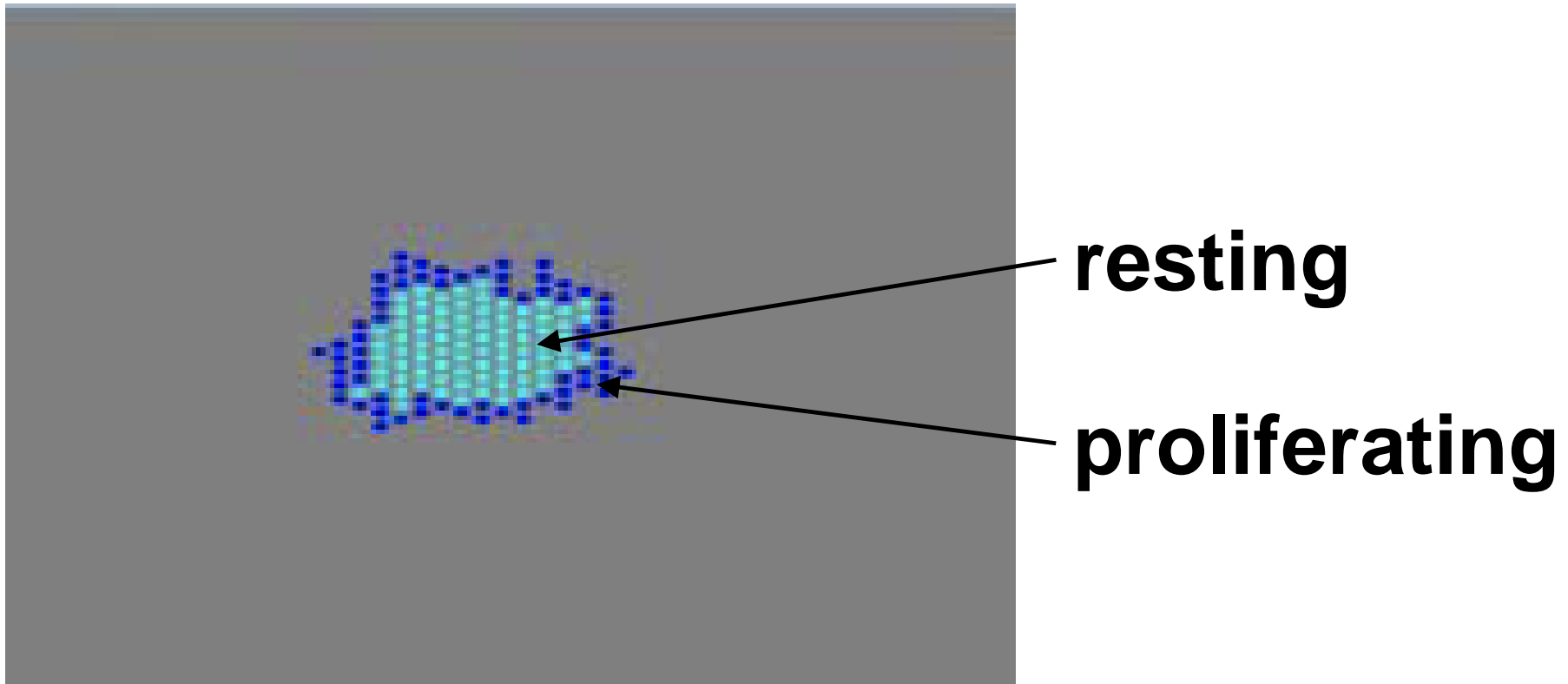


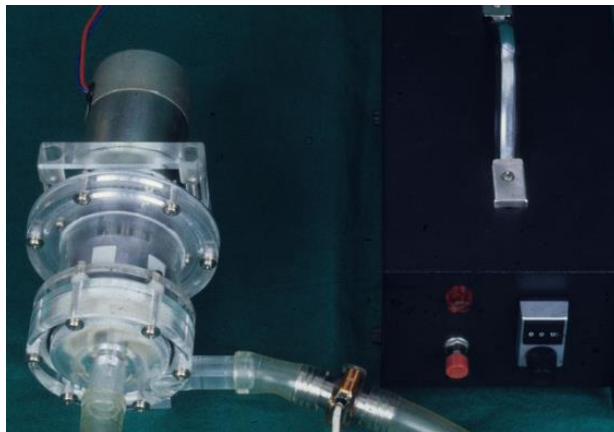
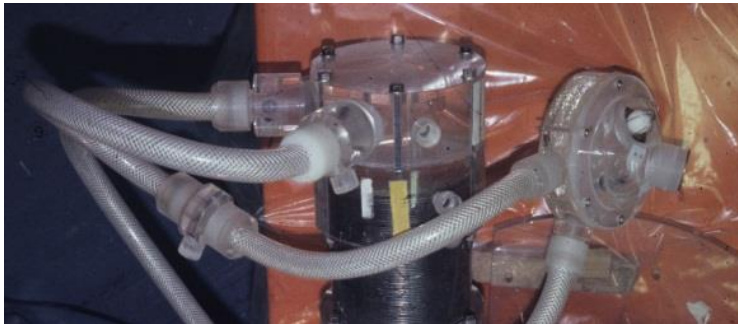
Fig. 7.1: Simulation of cell colony



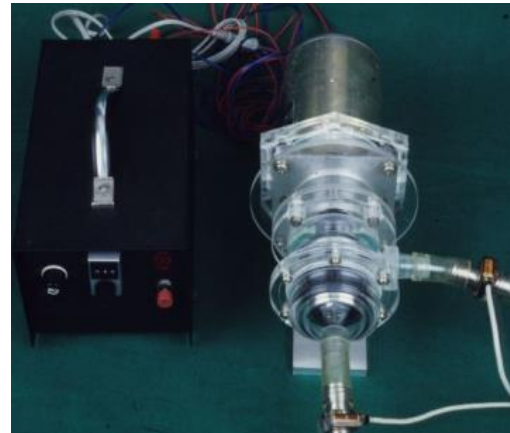
**Multiplication period and number,
Coordination number**

Fig. 7.2: Types of artificial heart

(a) Piston-bellows type



(b) Centrifugal type



(c) Screw type

Fig. 7.3: Third angle projection method

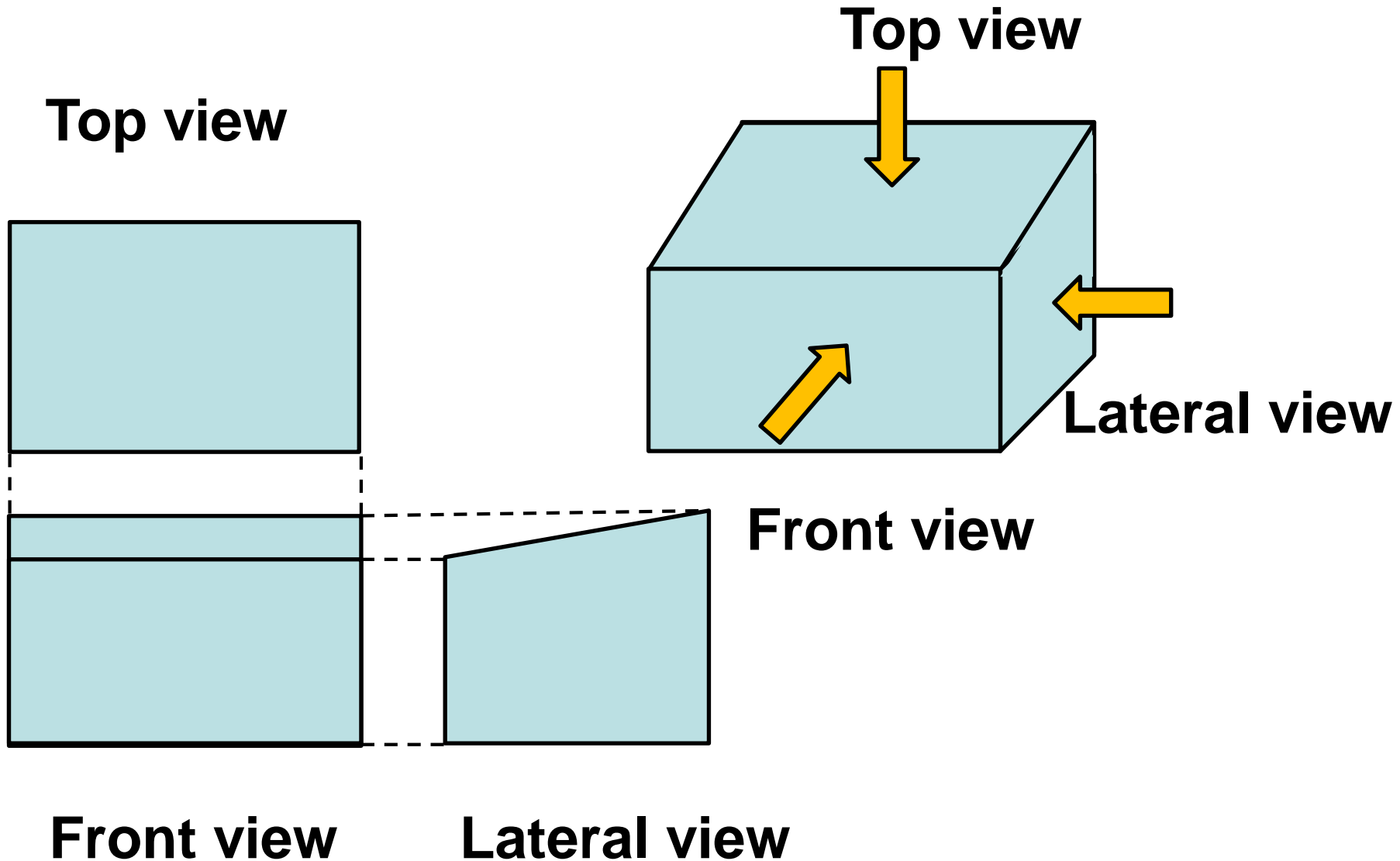


Fig.7.4: Drawing

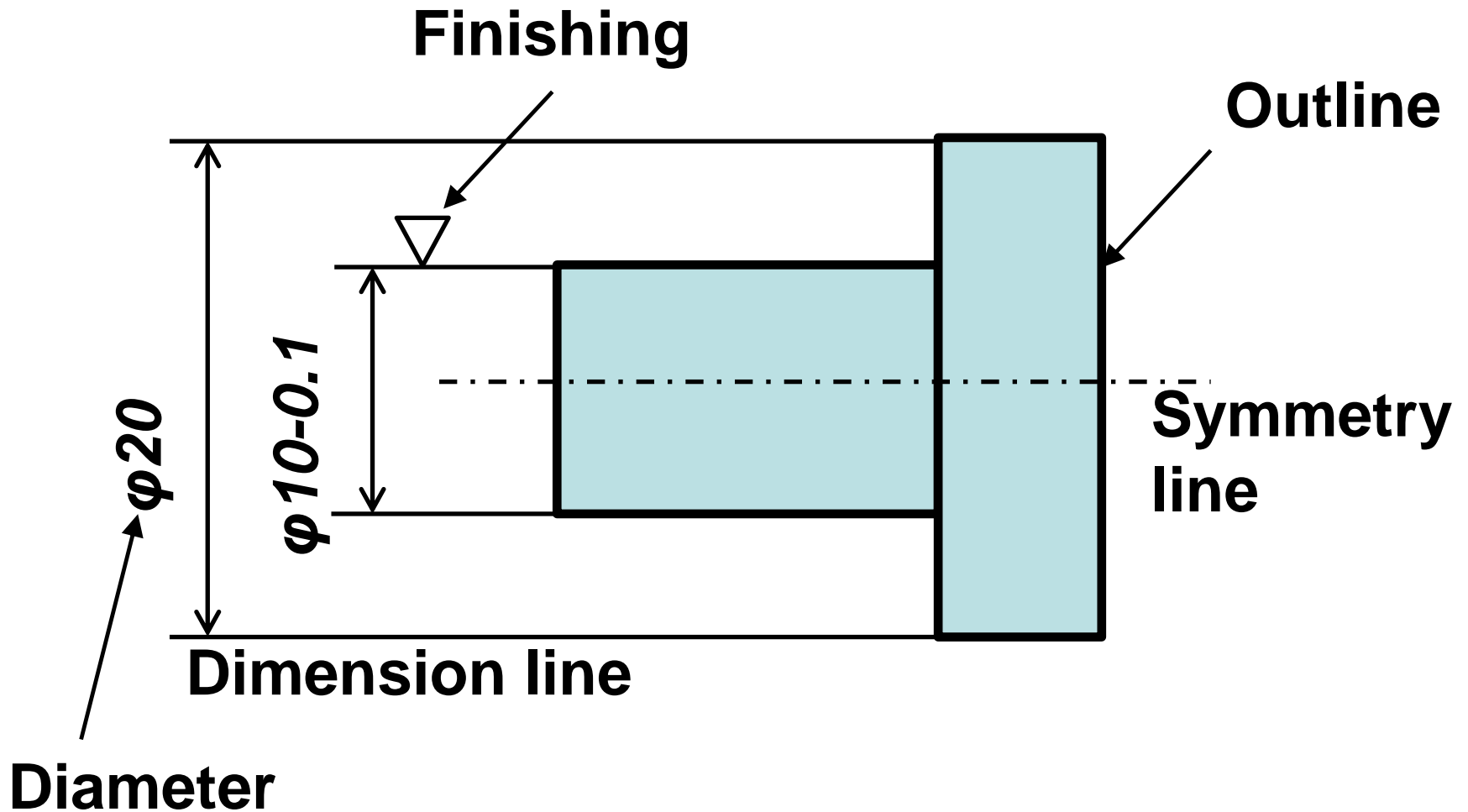


Fig. 7.5: Measurement of roughness

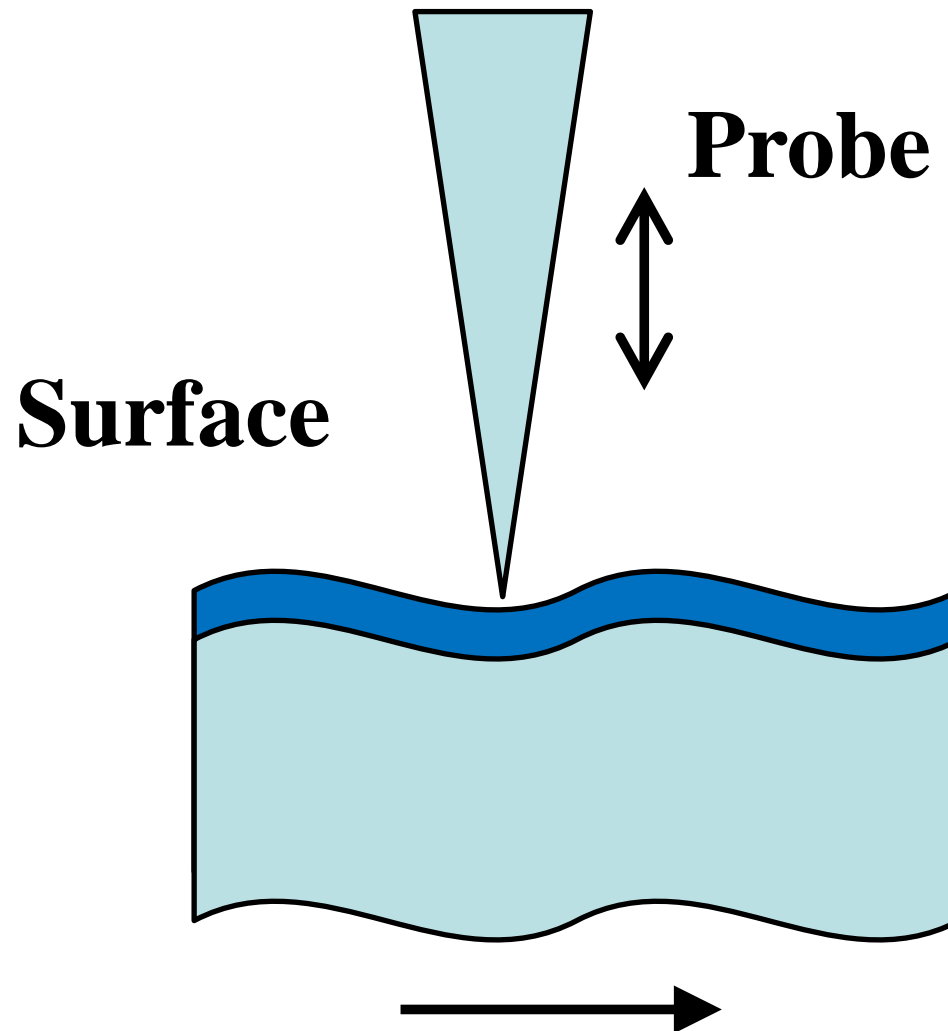
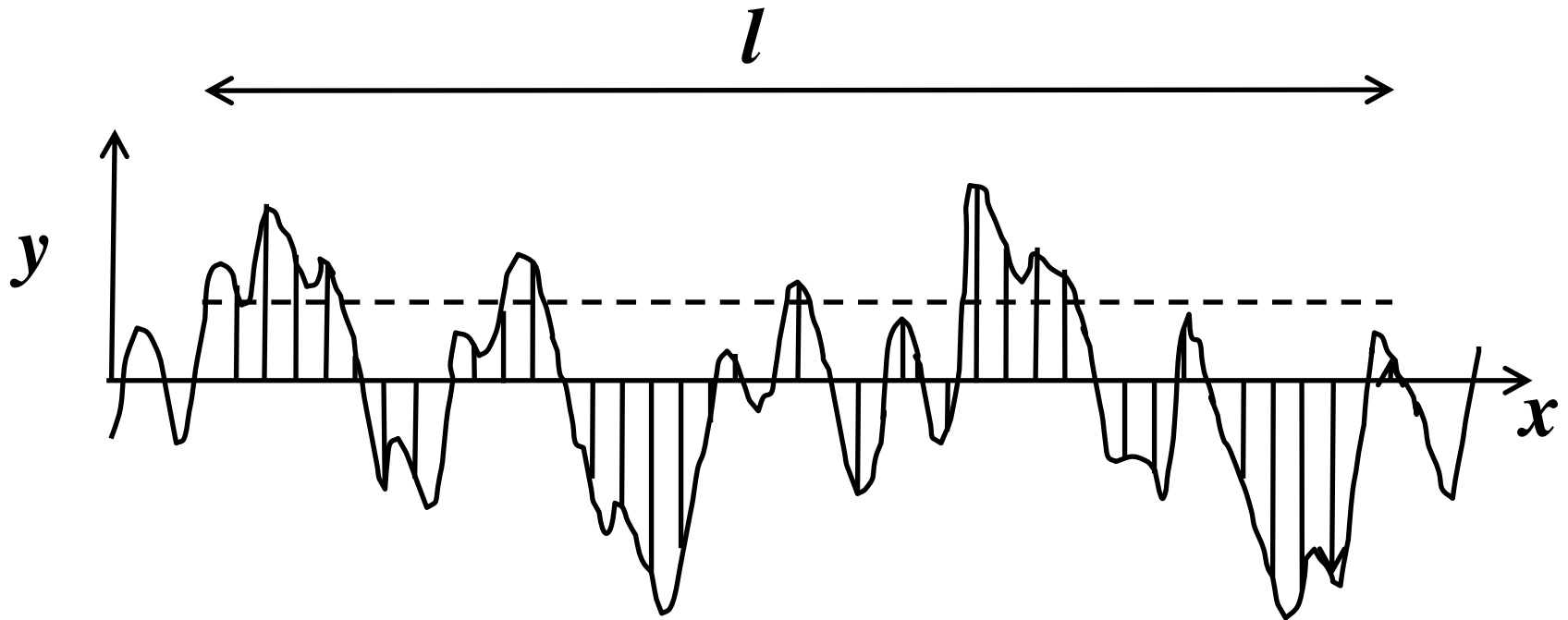


Fig. 7.6: Arithmetic average roughness: R_a



$$R_a = \frac{1}{l} \int_0^l |y(x)| dx \quad (7.1)$$

Fig. 7.7: Maximum height: R_y

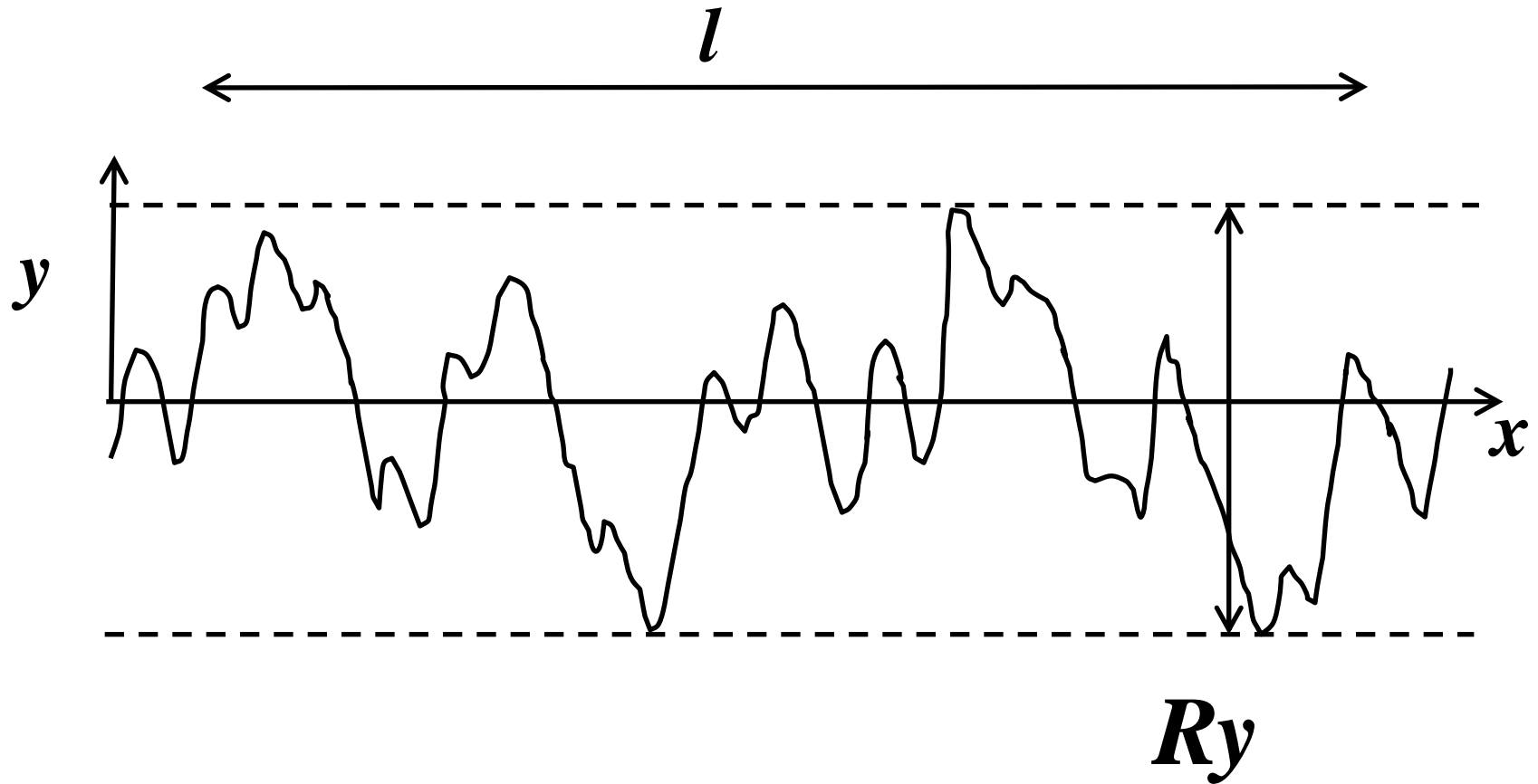
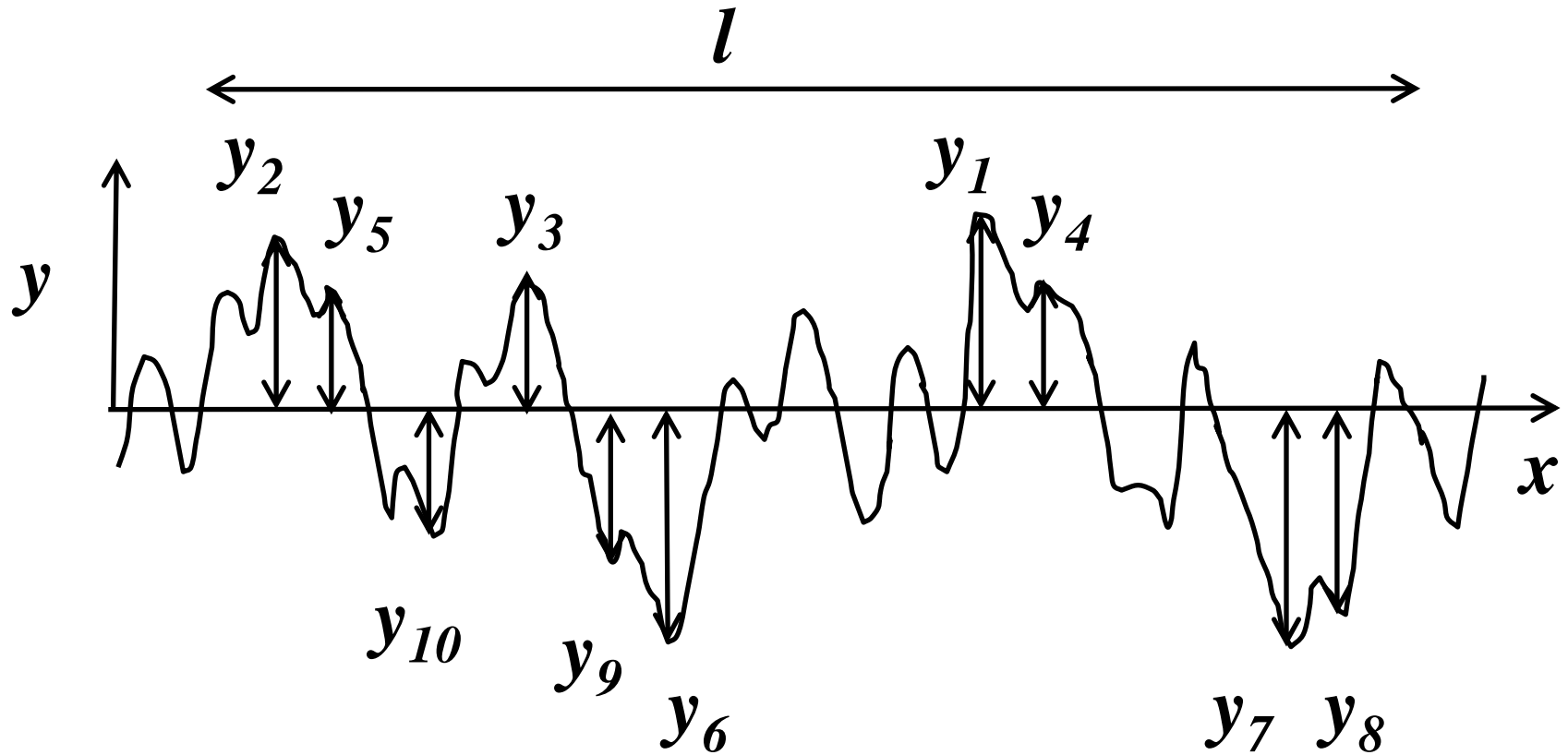
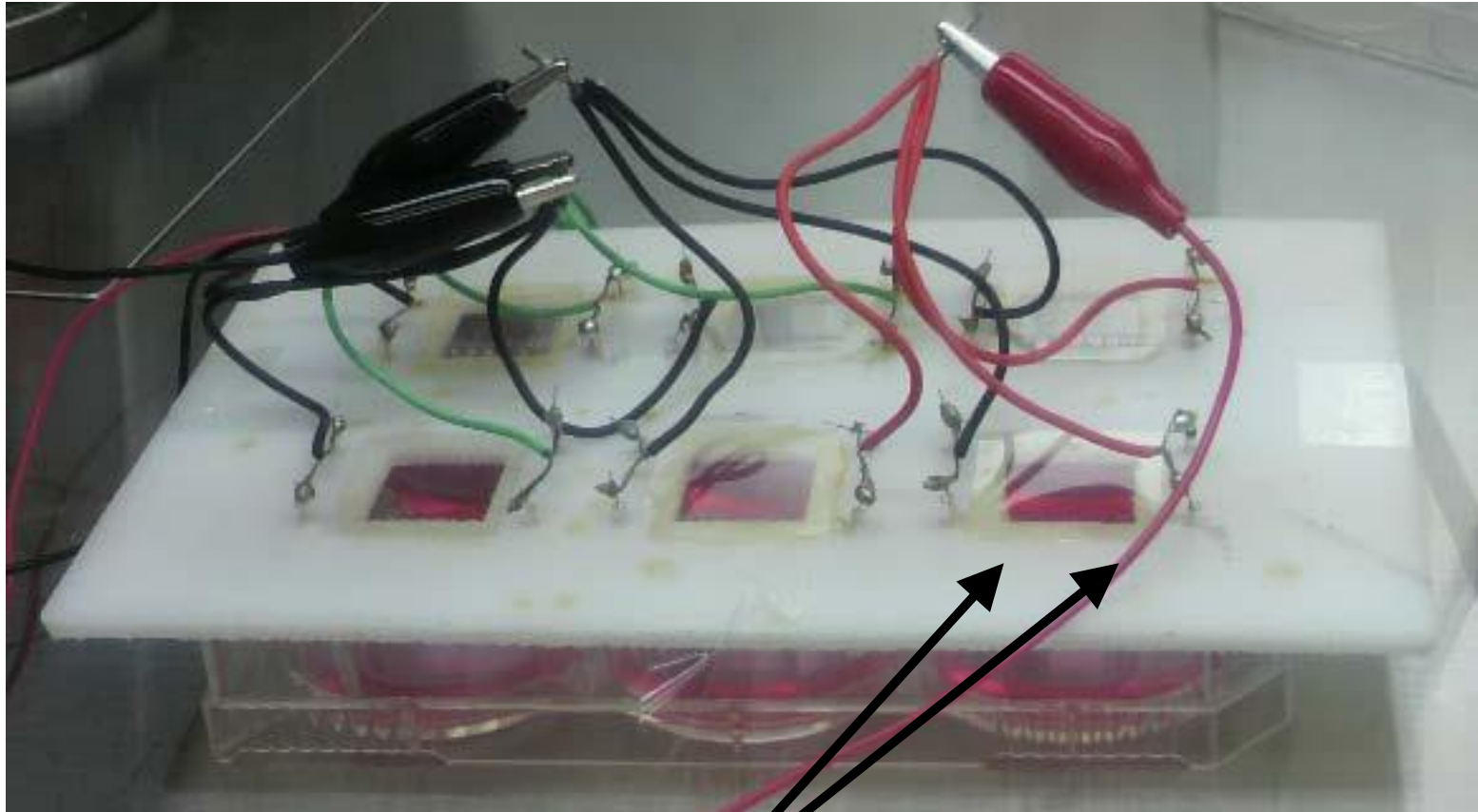


Fig. 7.8: 10-point average roughness: R_z



$$R_z = (| y_1 + y_2 + y_3 + y_4 + y_5 | + | y_6 + y_7 + y_8 + y_9 + y_{10} |) / 5 \quad (7.2)$$

Fig. 7.9: Cell culture with electric stimulation



Electrode

10 mm

Fig. 7.10: Saw-tooth

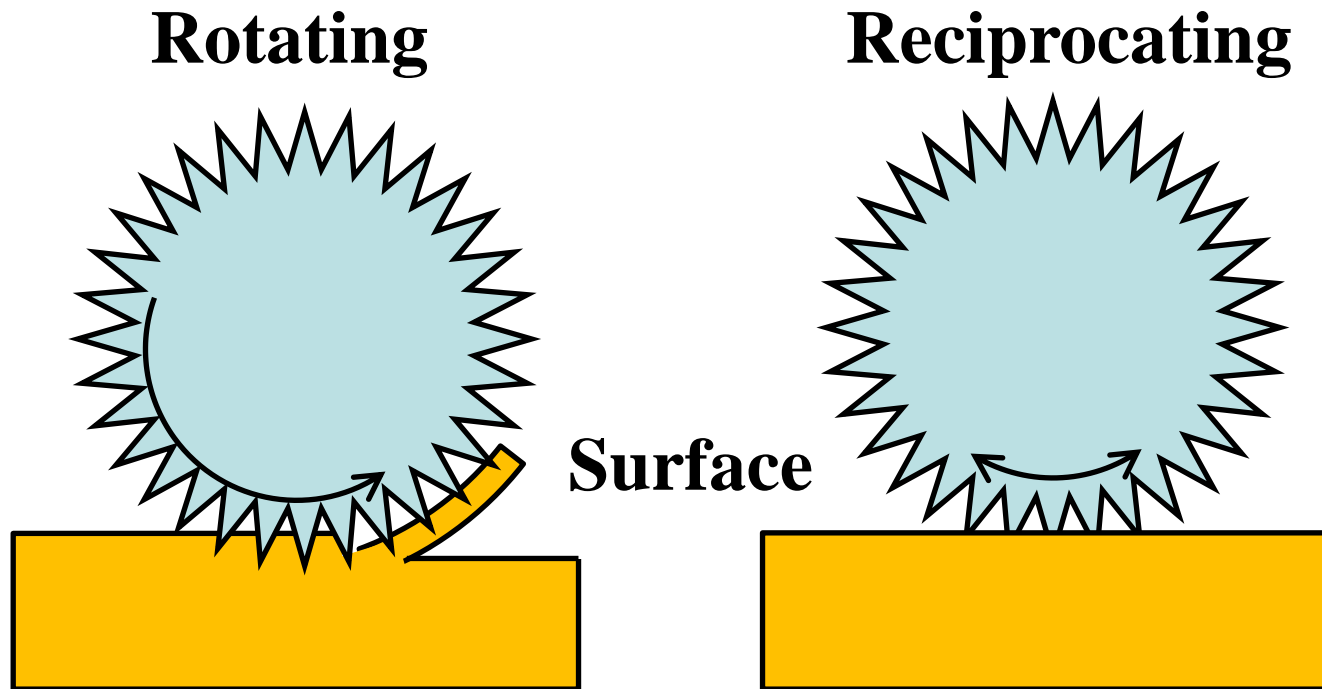


Fig.7.11: Cutting

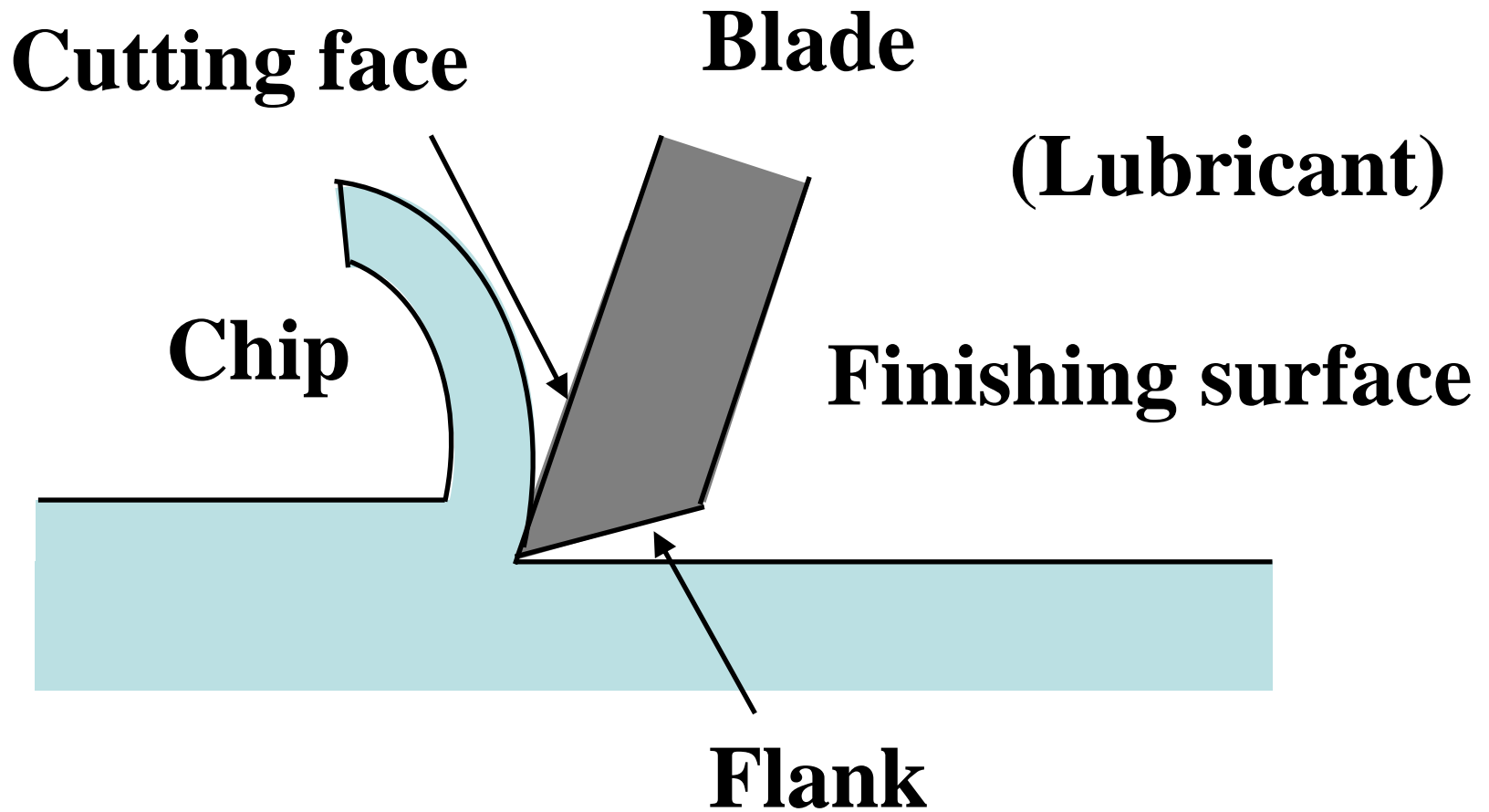
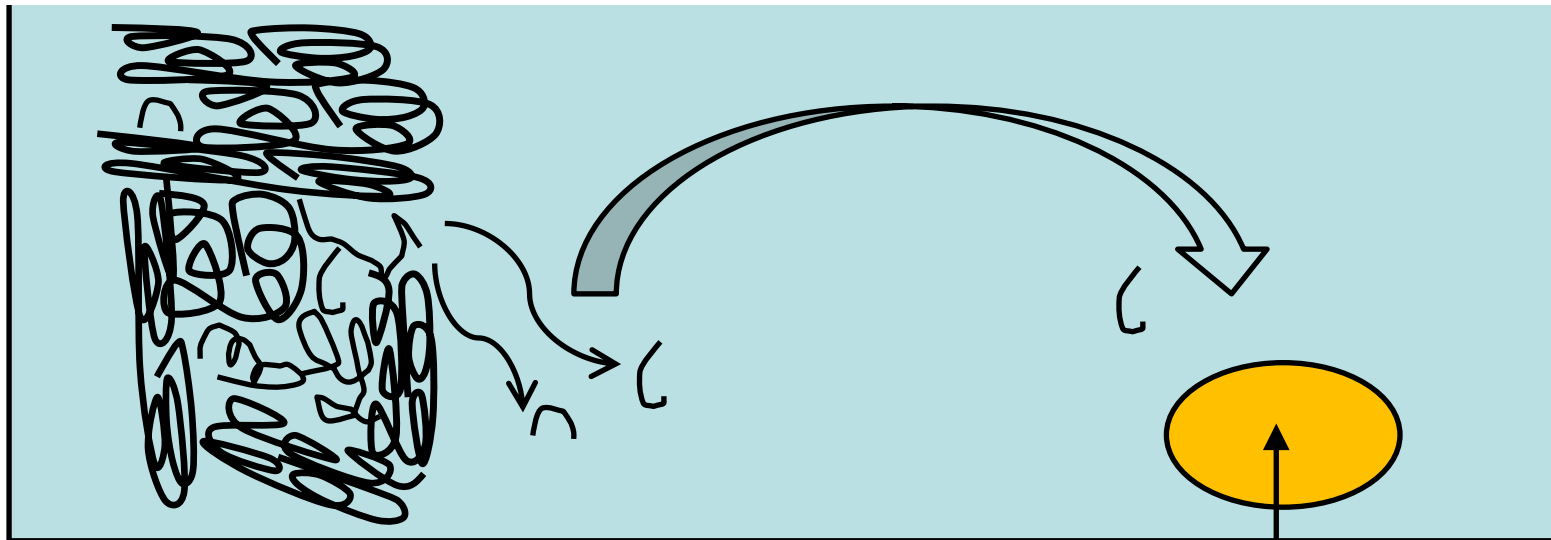


Fig. 7.12: Synthetic polymer in organ

Material

Monomer



Physiological fluid

Organ

Fig. 7.13: Photolithography

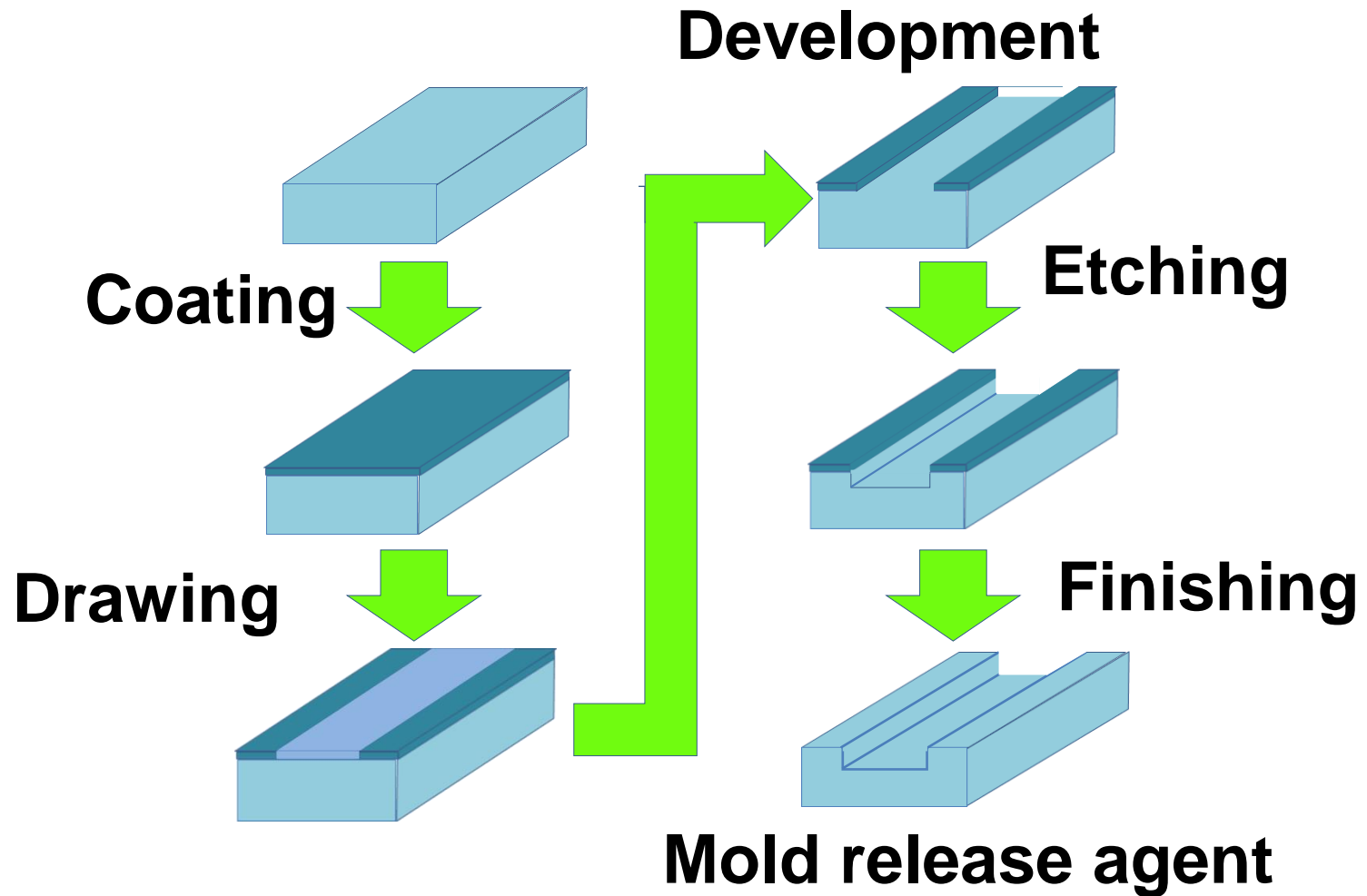
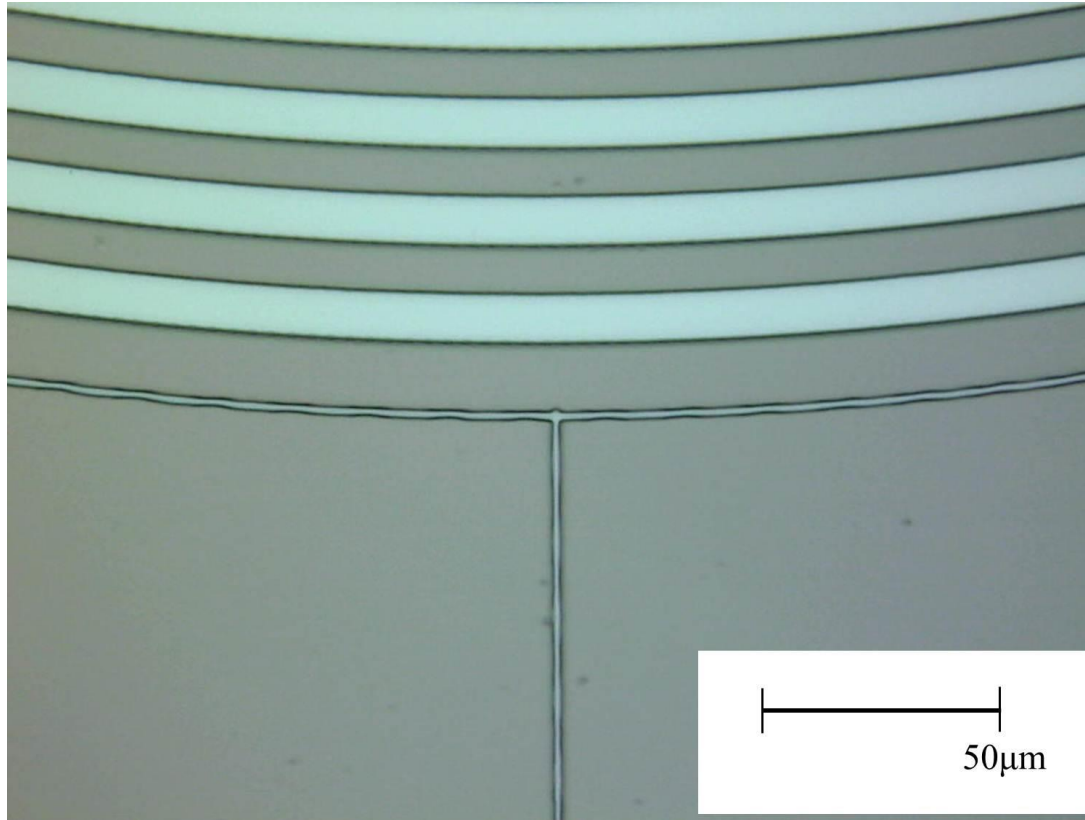


Fig. 7.14: Micro channel



50 μm

Fig. 7.15: Connector

