

Data from the book "Introduction to Biomechanical Engineering (in Japanese)": published by Corona Publishing Co., Ltd. Tokyo, Japan.

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- 1) Organism and Machine**
- 2) Unit and Measurement**
- 3) Materials (Hemolysis)**
- 4) Flow (Blood circulation)**
- 5) Energy (Oxygenator, Dialyzer)**
- 6) Movement (Joint prosthesis)**
- 7) Designing and Machining
(Artificial organs)**

Fig. 1.1: Living body and machine

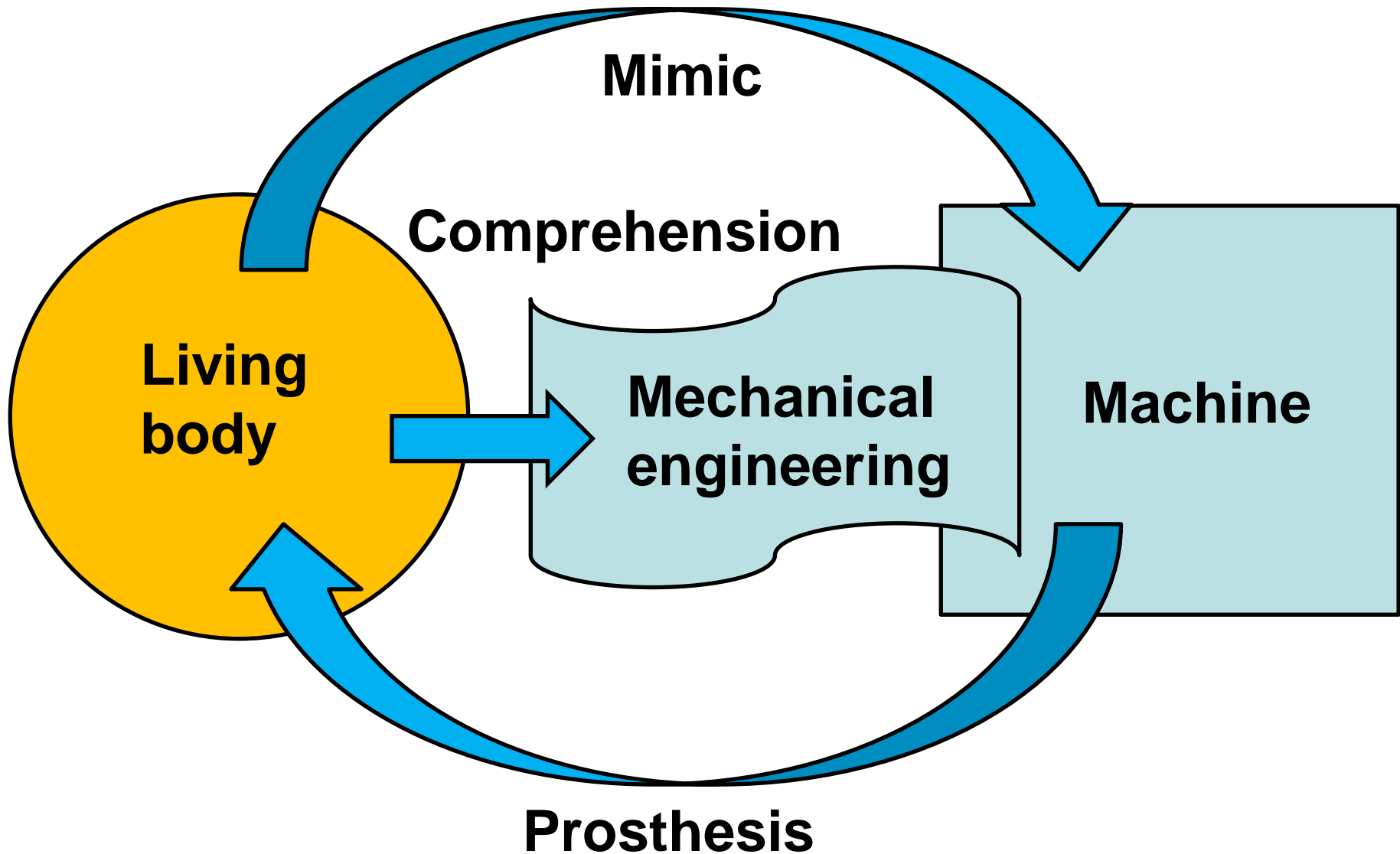


Fig. 1.2: Character of machine

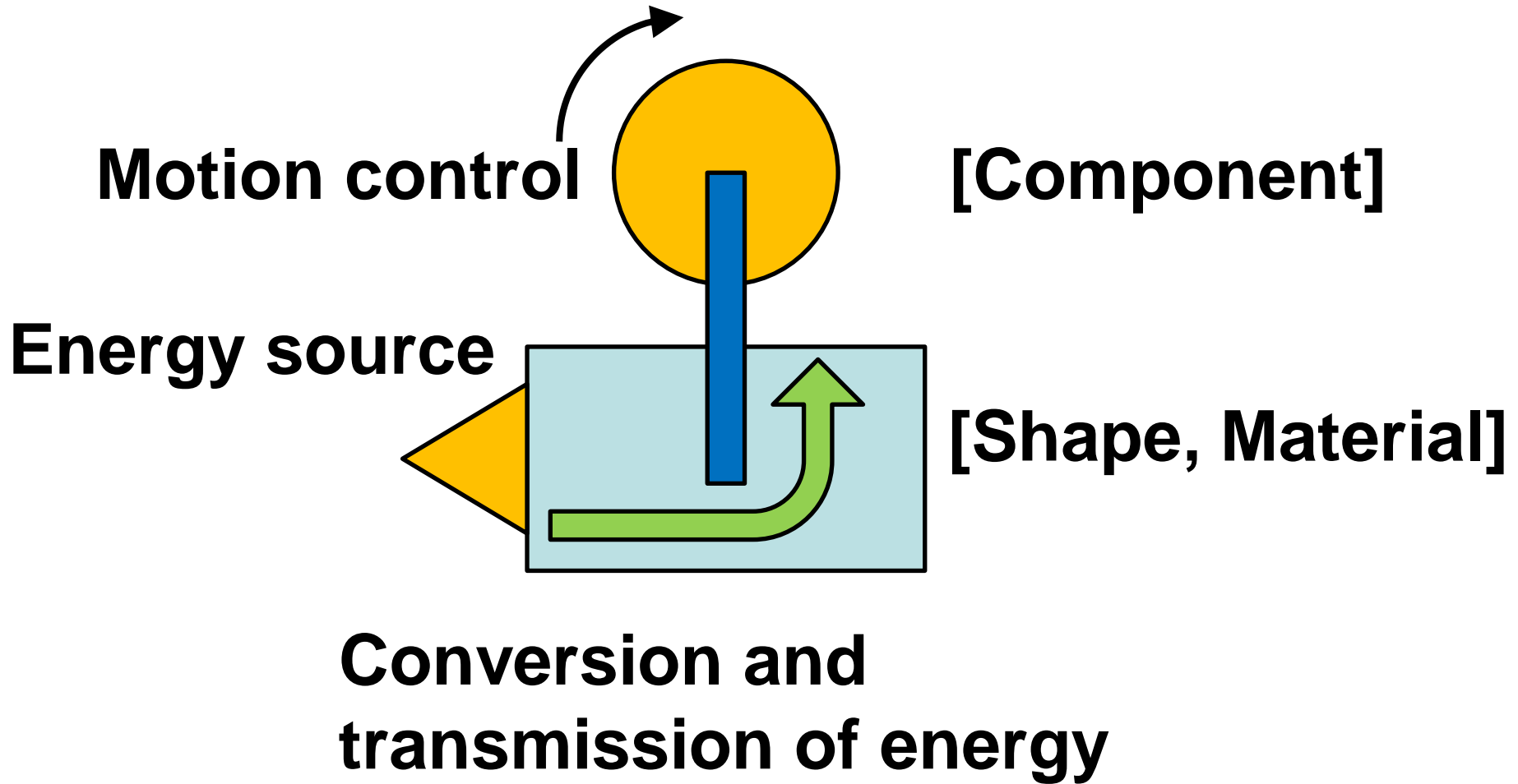
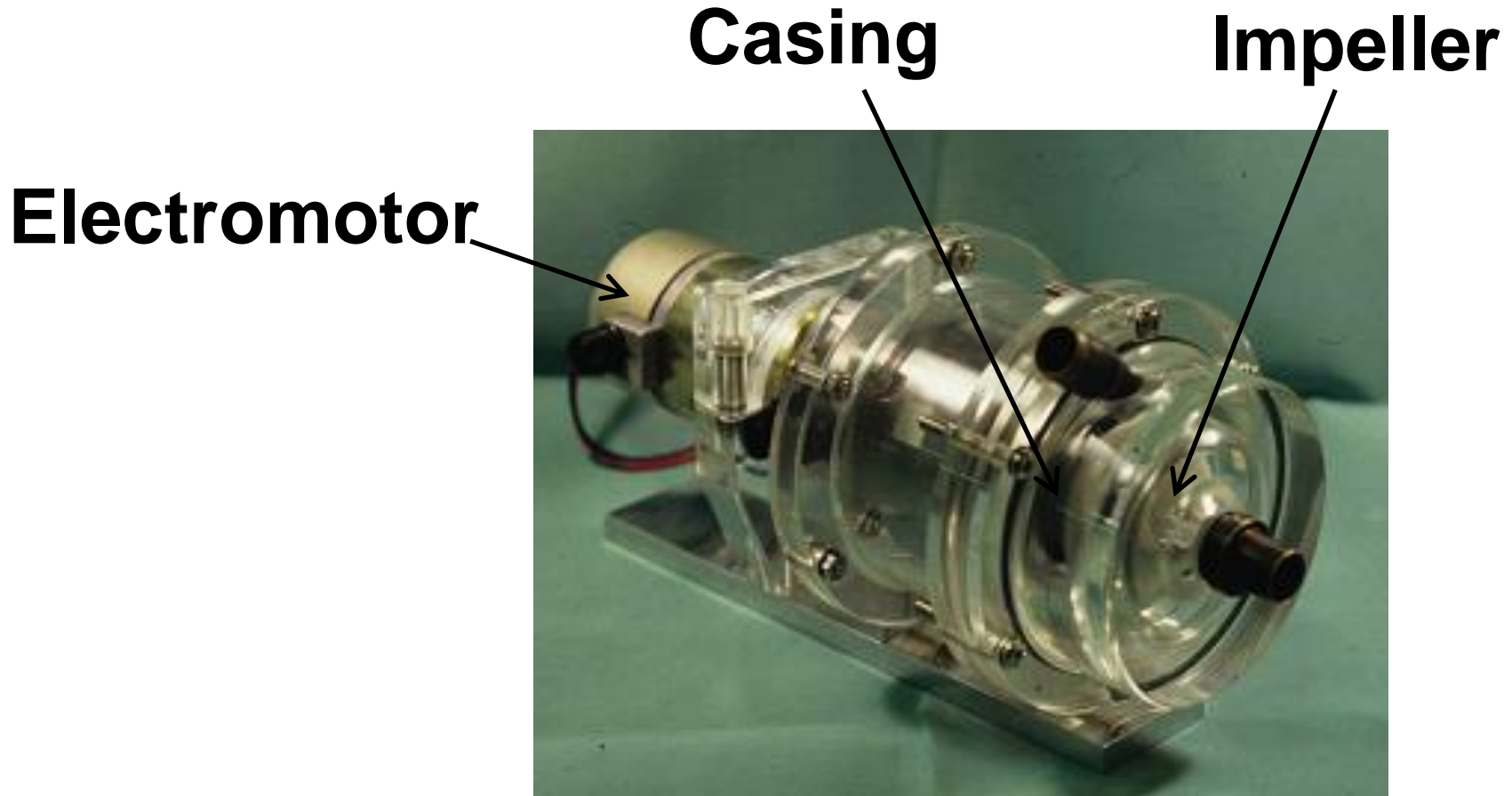


Fig. 1.3: Centrifugal pump



Electric energy  **Mechanical energy**

Fig. 1.4: Character of organism

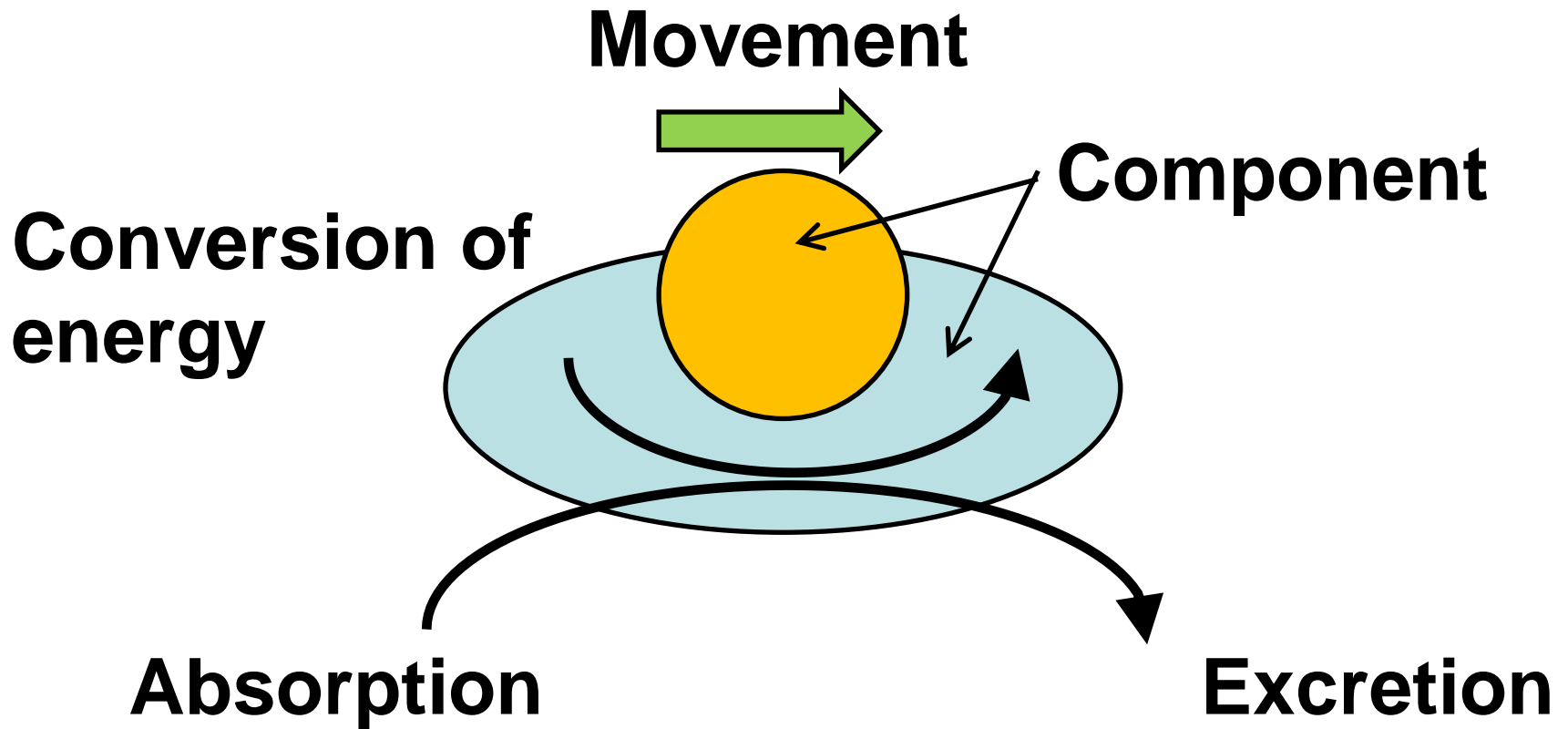


Fig. 1.5: Difference between organism and machine

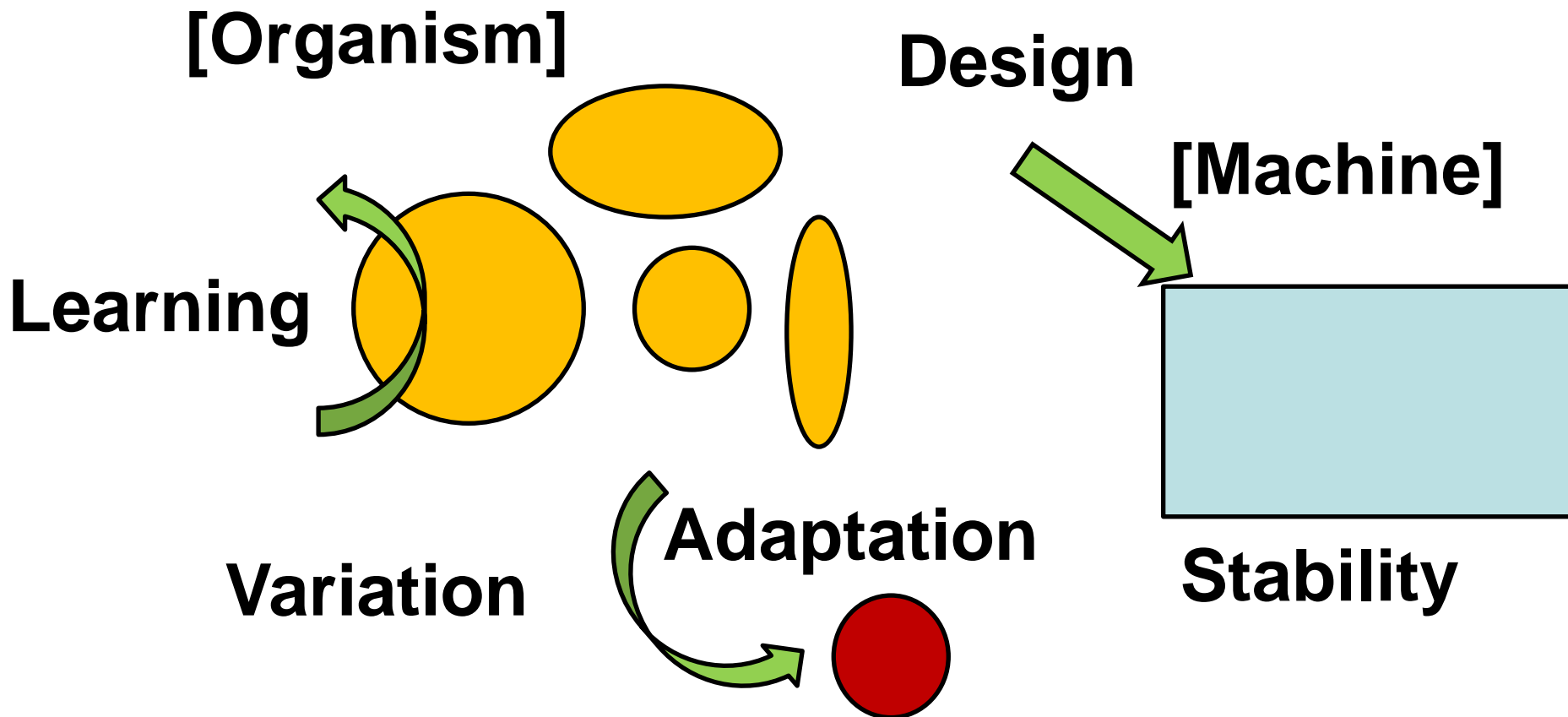


Fig. 1.6: Individuality and homogenization

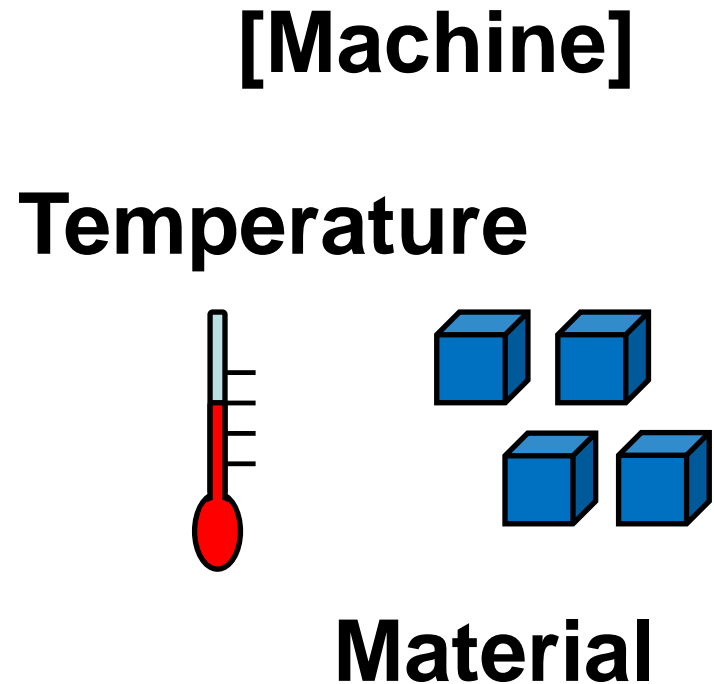
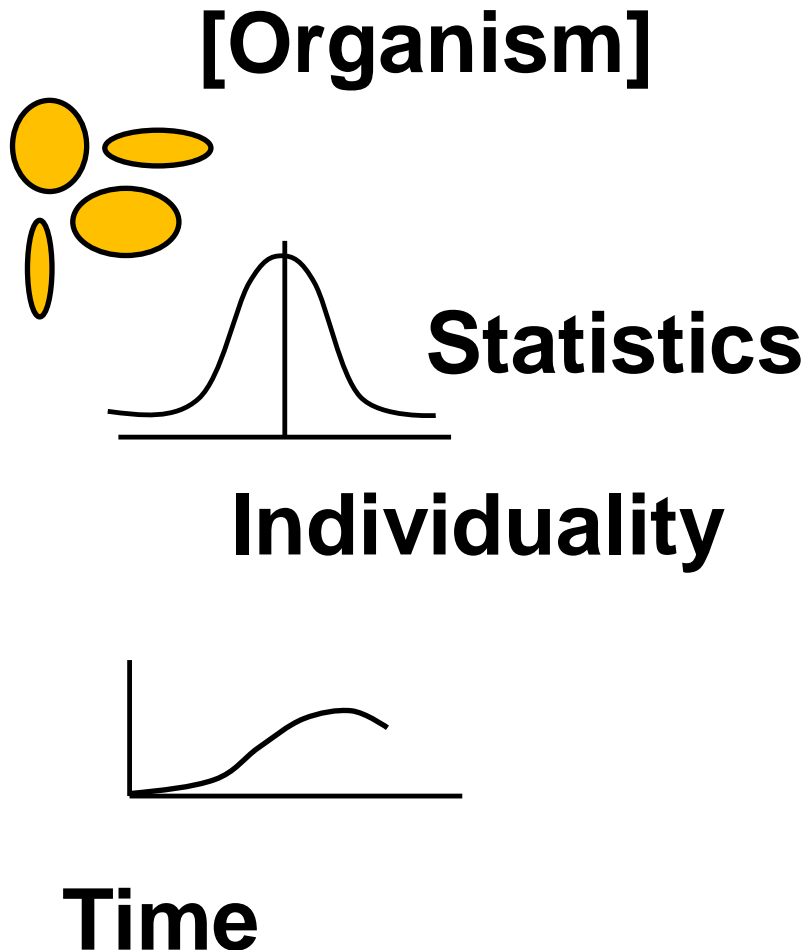
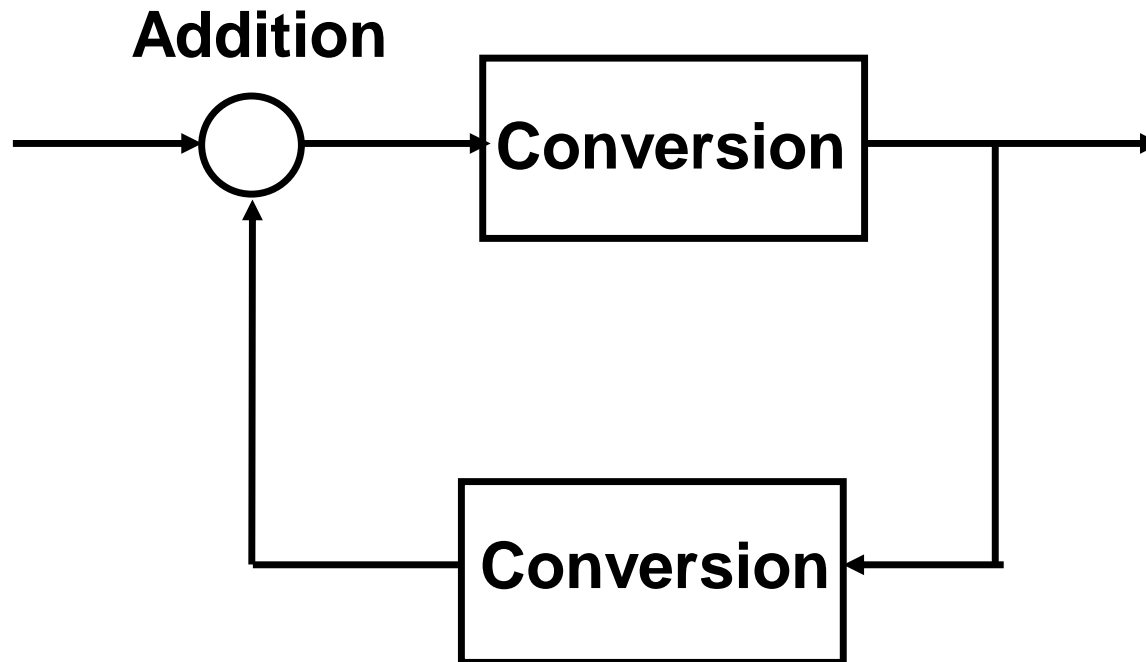


Fig. 1.7(a) Control?

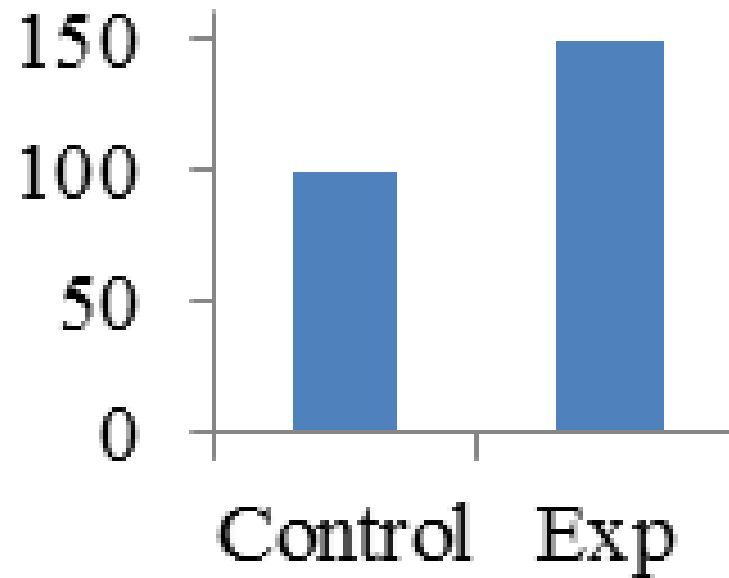
Technical term



Adjustment, Regulation

Fig. 1.7(b) Control?

Technical term



Comparison

Fig. 1.8: Biomedical engineering field

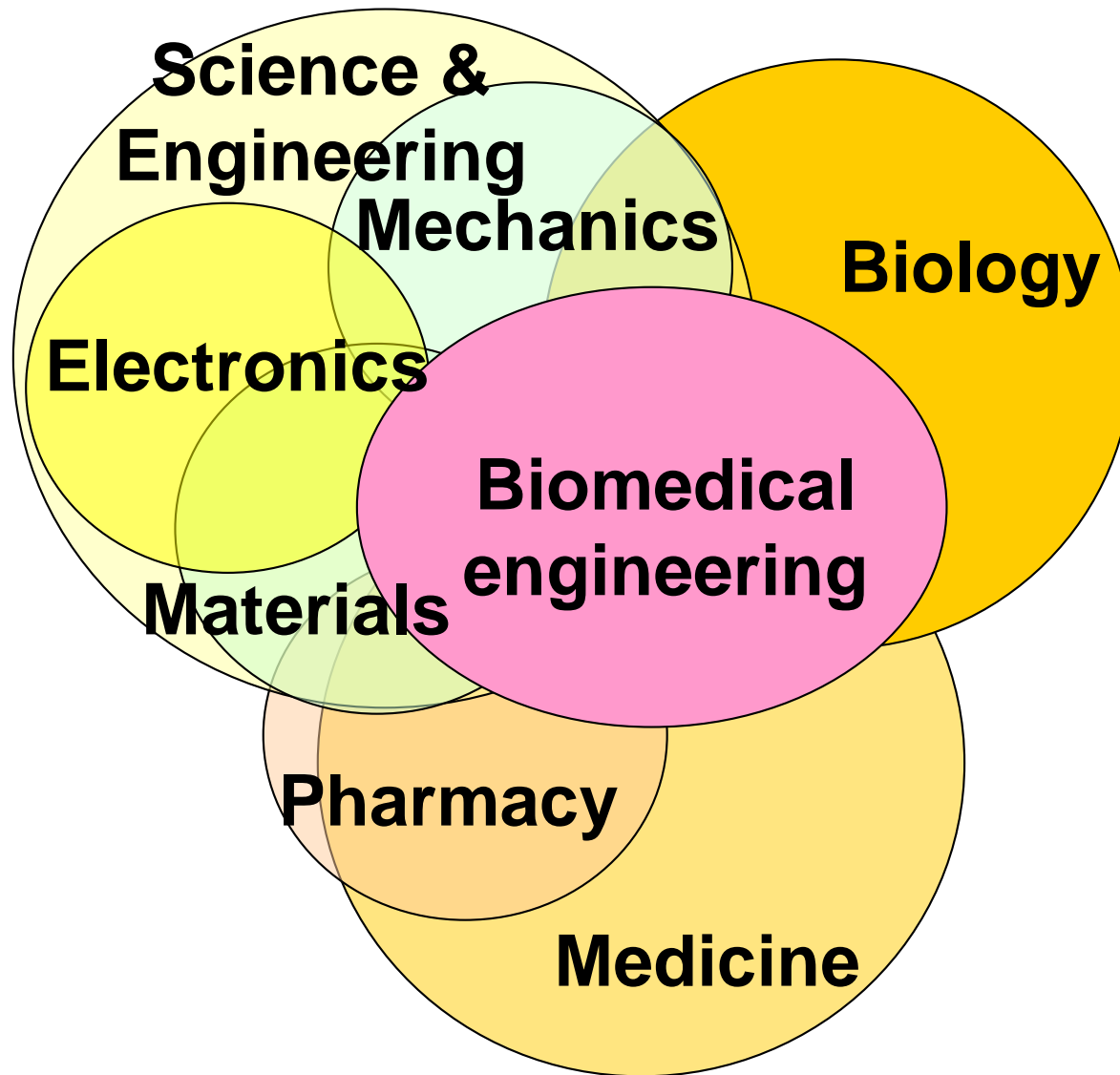


Fig. 1.9: Bridge Curriculum

Measurement Engineering

(Prof. A)
Unit, Sensor,
Amplifier, Error,
etc.

Electrocardiogram

(Prof. B)

Introduction to Medicine

(Prof. B)
Pathology,
Internal Medicine,
Surgery,
Diagnostics, etc.

Medical Engineering
(Prof. C)