SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35

Accredited by NBA-AICTE and Accredited by NAAC – UGC with A++ Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

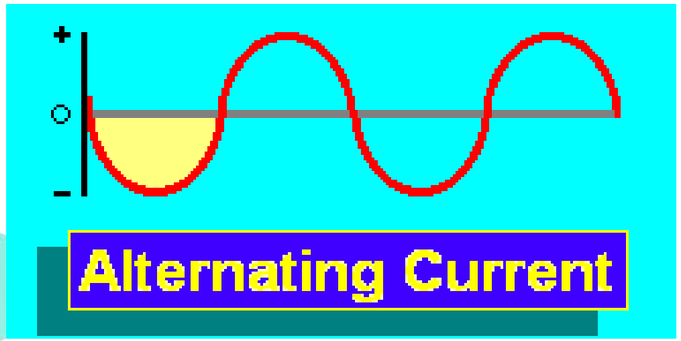
COURSE NAME: 19EEB210/ELECTRICAL MACHINES AND DRIVES

Unit I – Introduction

What is Motor……?

Electrical Energy

(Rotational Force) Mechanical Energy



Motor

Electrical Drive

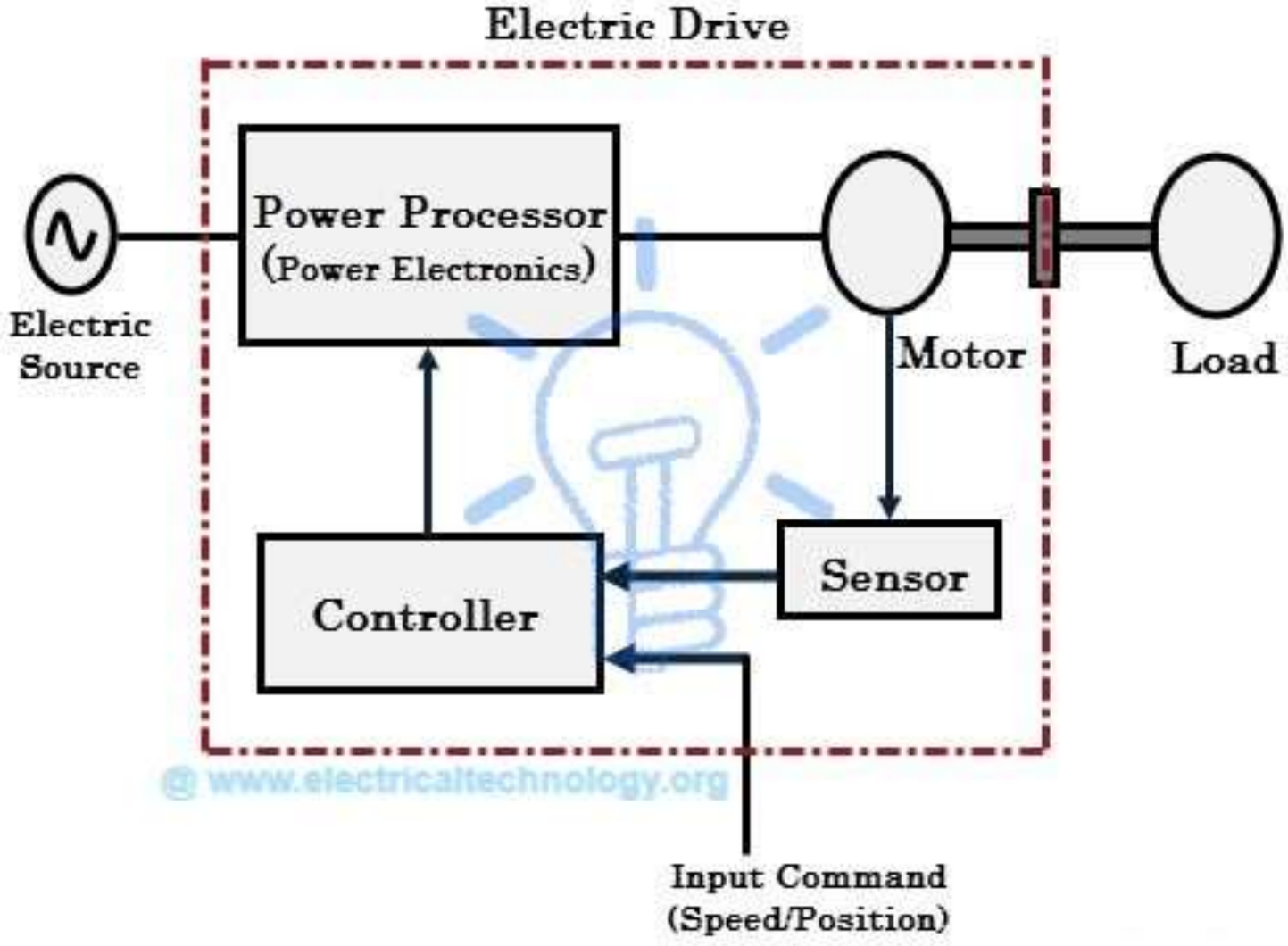
System employed for *motion control* of Electrical Motor is called Electrical Drives

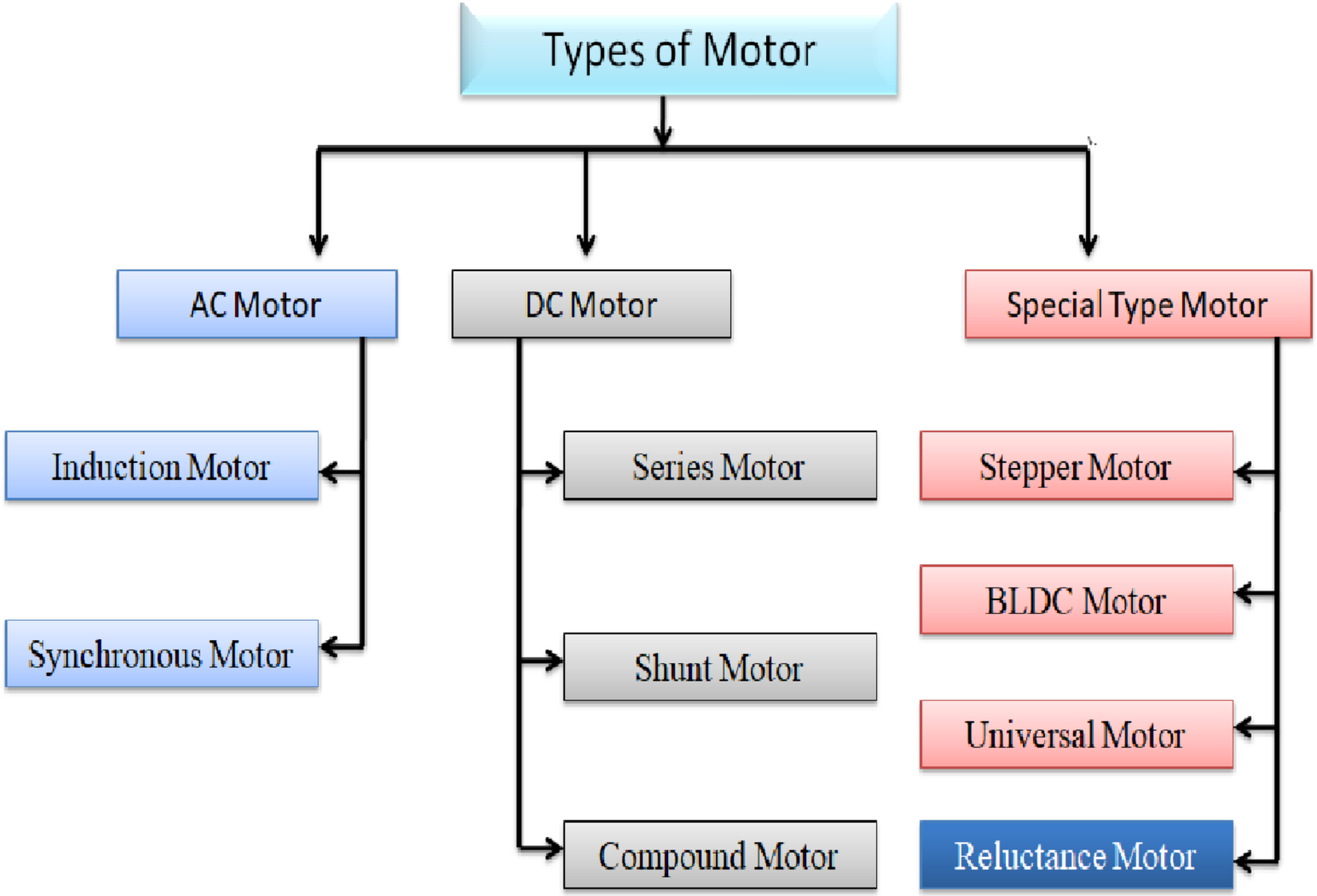
Control Unit

+

Motor

Block diagram for Electrical Drives

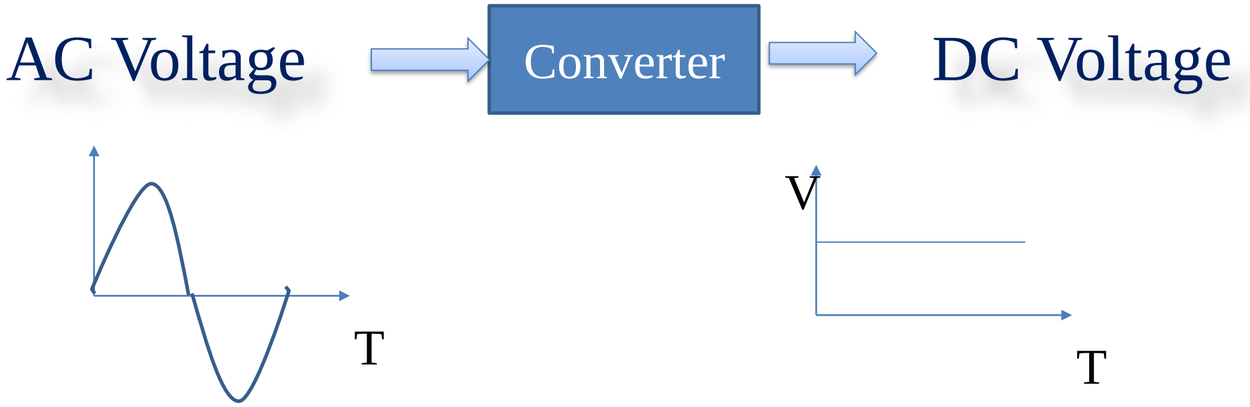



Types of Motor
AC Motor
DC Motor
Special Type Motor
Induction Motor
Synchronous Motor
Series Motor
Shunt Motor
Compound Motor
Stepper Motor
BLDC Motor
Universal Motor
Reluctance Motor

Power Processor

Converters

Converter is used to convert the AC Voltage into DC Voltage

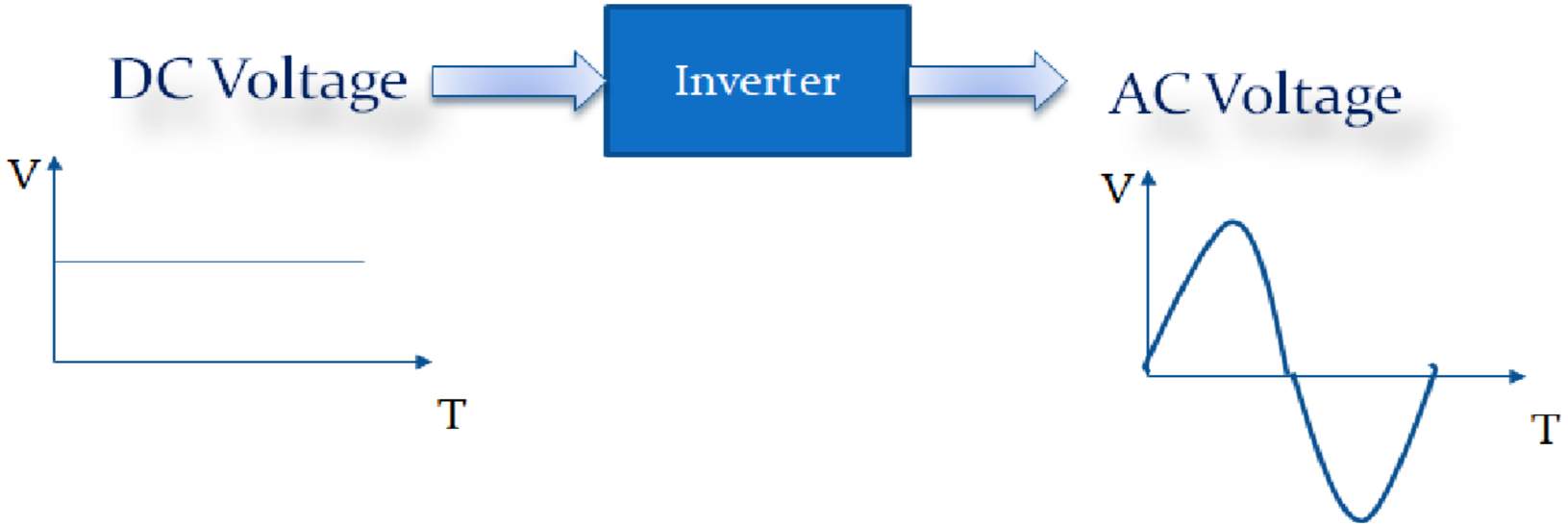


Conversion Process takes place

- Converter
- Inverter
- Chopper
- Cyclo converter

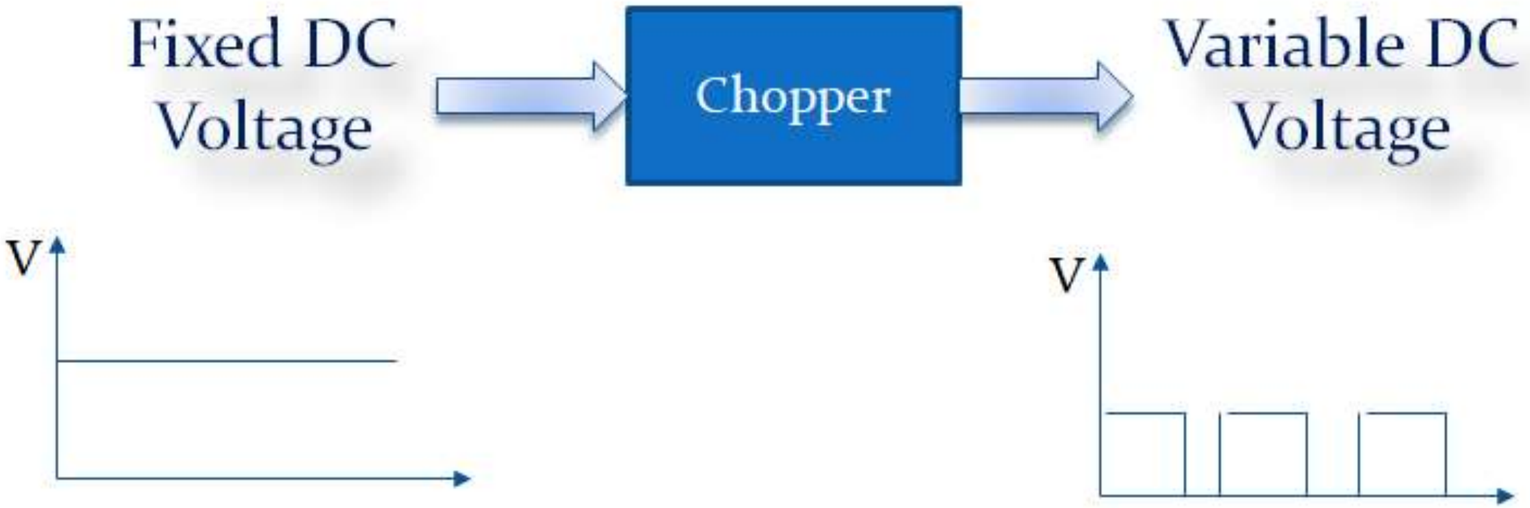
Inverters

Inverter is used to convert the DC Voltage into AC Voltage



Chopper

Chopper is used to convert the fixed DC Voltage into Variable DC Voltage

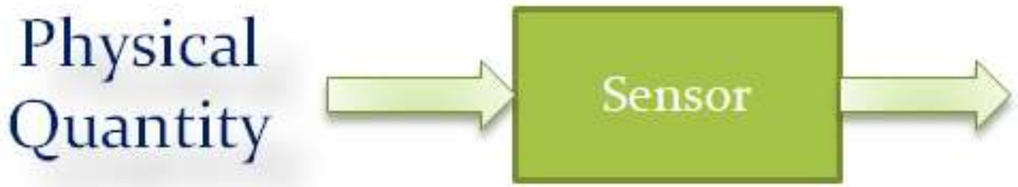


Cyclo Converters

Cyclo Converter is used to convert the Fixed AC Voltage into Variable AC Voltage

Sensing Unit

Sensor is used to sense the physical quantity and convert it to electrical quantity



Electrical Source

- Current
- Voltage

Voltage Rating::110V, 230V, 415V, 25KV

Current Rating:: 0.5A, 1A, 2A, 3A, 5A, 10A, 15A, 20A, 30A

Frequency-50Hz

Voltage Rating::5V, 6V, 12V, 24V, 48V, 220V

Current Rating:: 0.2A, 0.3A, 0.5A, 1.5A, 1A, 2A, 2.5A, 2A, 3A

There is no Frequency

Control Unit

- It controlling the system motion without any damages according to the sensing unit along with input command.
- Control unit consist of
  - digital integrated circuit, Transistor and Microprocessor

Load

- Normally loads are designed for accomplishing the given task.
- For example
  - Fan, Pumps
  - Robots, Washing Machine

KEEP
LEARNING..

Thank u

SEE YOU IN NEXT CLASS