



# ELEMENTS OF ELECTRICAL ENGINEERING

## Course Code : UE25EE141A/B

---

### FACULTY CONTRIBUTED:

Department of EEE, RR Campus

Prof . Jyothi T N

Prof. Vadhira<sup>J</sup> K P P

Prof. Kruthika N

Prof. Suma S

Prof. Pushpa K R

Prof. Sangeeta Modi

Department of ECE, EC Campus

Prof. Lokesh L

Prof. Dhanashree G Bhate

Dr. Renuka R Kajur

Prof. Rajesh Chandrashekhar

Prof. Sangam Kumar G H

# ELEMENTS OF ELECTRICAL ENGINEERING (UE25EE141A/B)

---

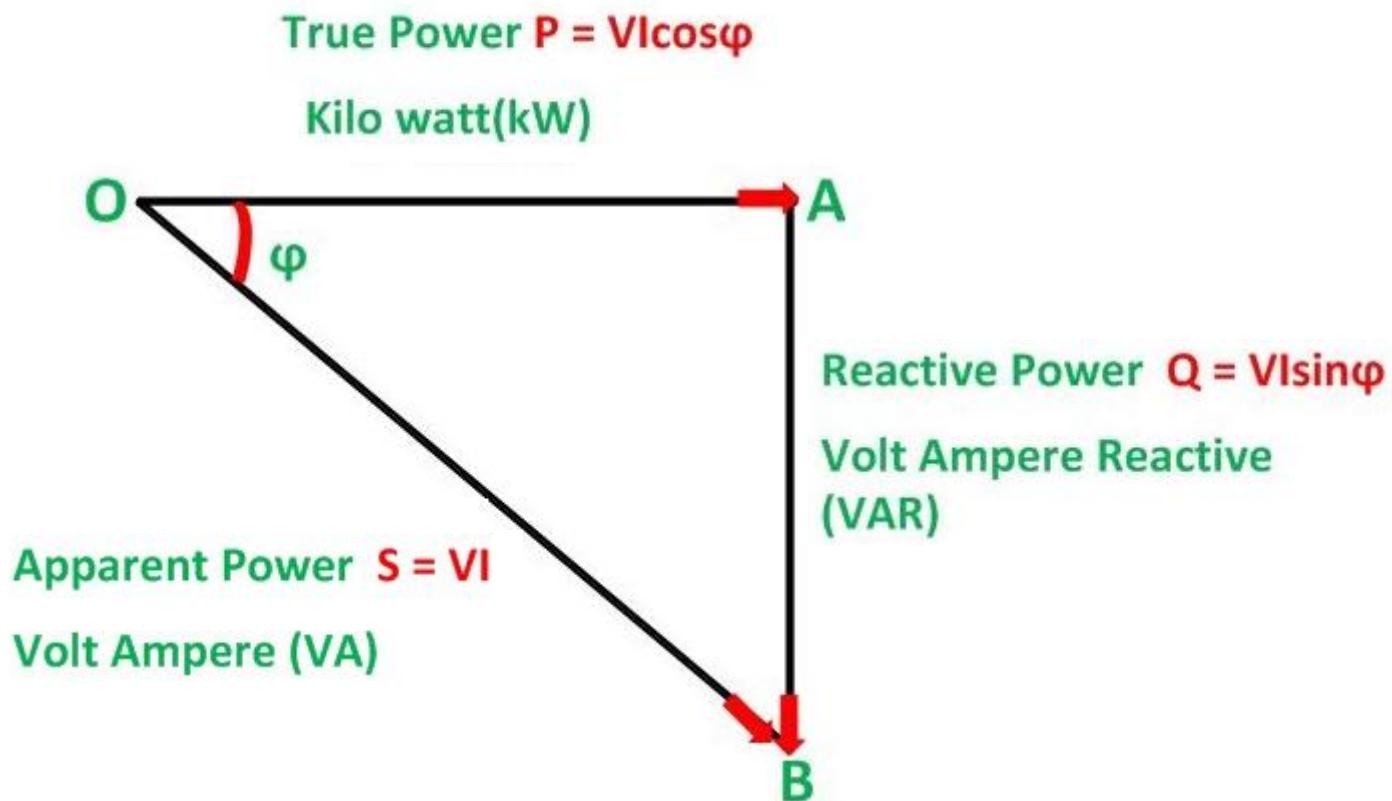
## CONCEPT OF POWER FACTOR IMPROVEMENT

Jyothi T N

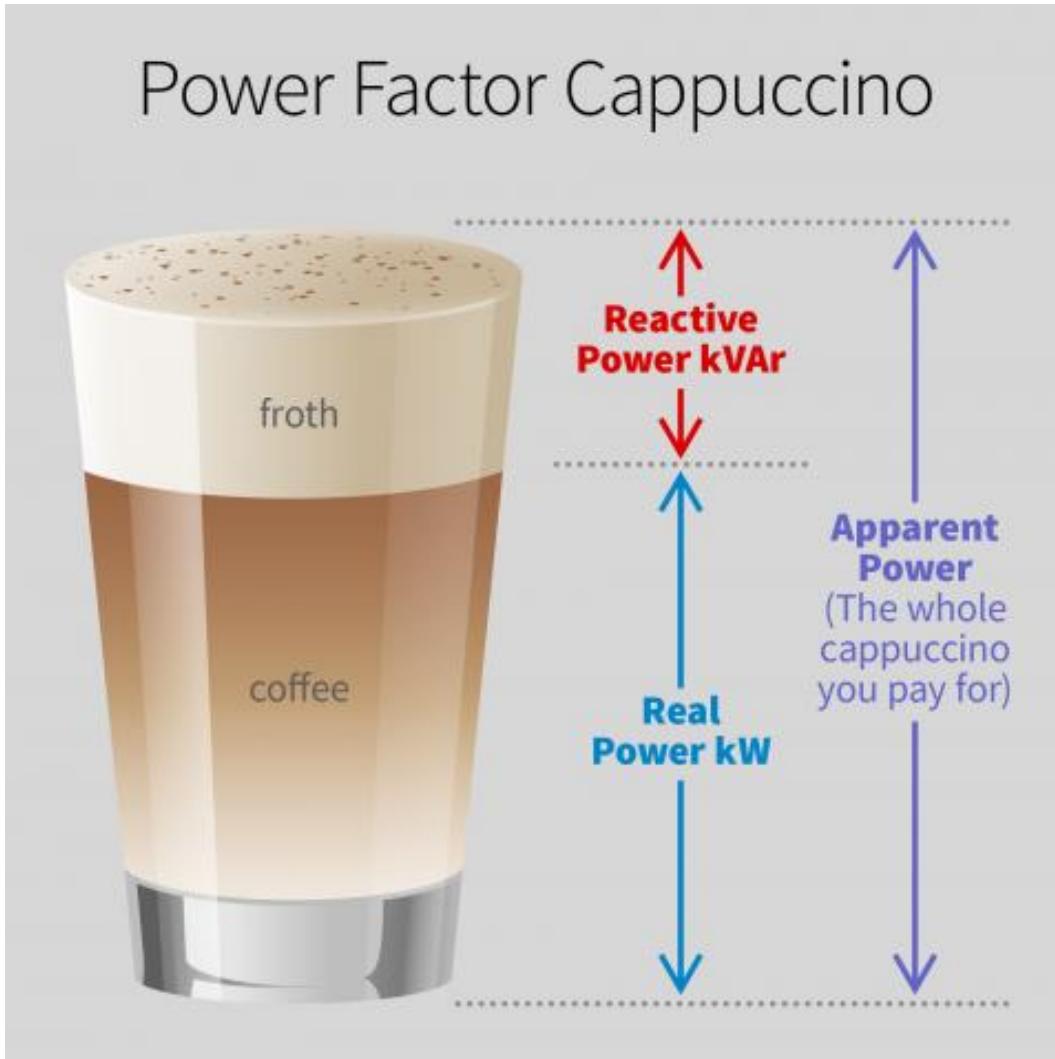
Department of Electrical & Electronics Engineering

## Power Factor

The ratio of active power to apparent of an AC system is called its powerfactor.



## Power Factor



## Power Factor

---

A frothy latte =  
**Poor power factor correction**

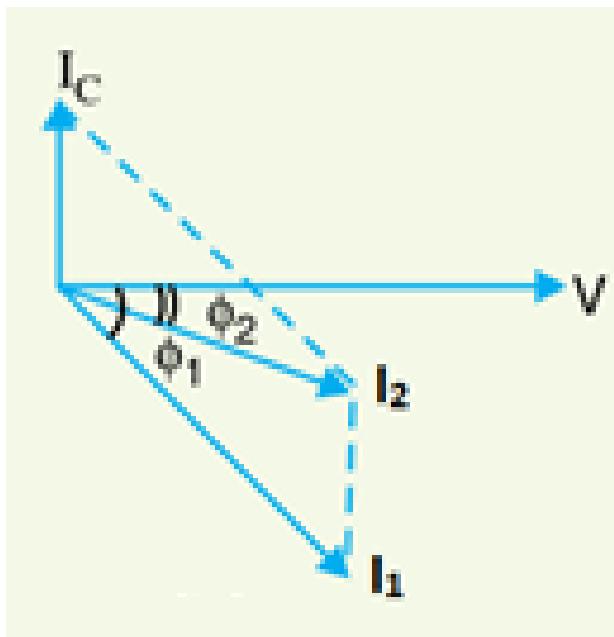
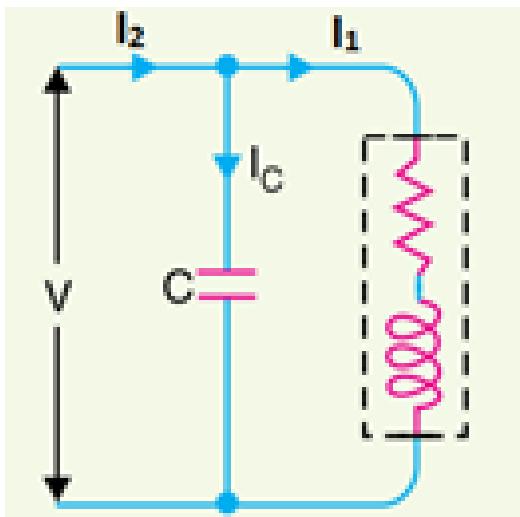
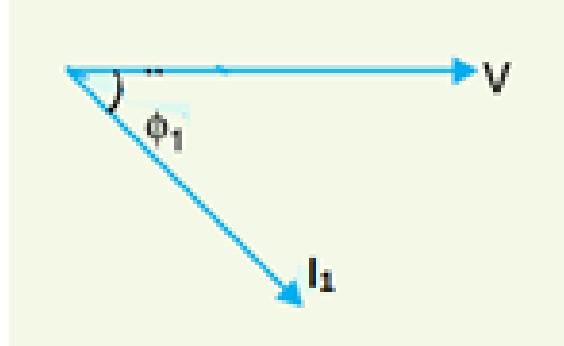
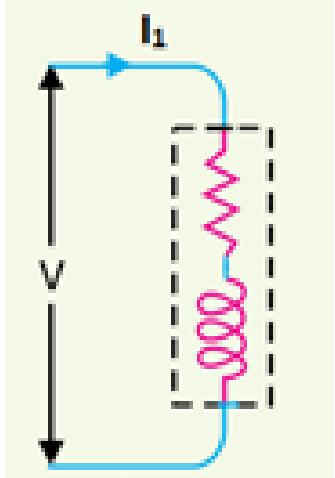


A perfect body =  
**Good power factor correction**



Latte glass = Capacity = kVA  
Coffee = Useful energy = kW  
Froth = Waste capacity

## How Power Factor can be improved?



## Advantages of Power Factor Improvement

---

- $I^2R$  Losses in the power system are reduced & efficiency of operation will be higher.
- Reactive power flow in the system will get reduced.
- A higher Power Factor will help in better utilization of the full capacity of the power system.
- Improves voltage profile at the Load end.

### Text Book:

1. "Basic Electrical Engineering" S.K Bhattacharya, 1<sup>st</sup> Edition Pearson India Education Services Pvt. Ltd., 2017
2. "Basic Electrical Engineering", D. C. Kulshreshtha, 2<sup>nd</sup> Edition, McGraw-Hill. 2019
3. "Special Electrical Machines" E G Janardanan, PHI Learning Pvt. Ltd., 2014

### Reference Books:

1. "Engineering Circuit Analysis" William Hayt, Jack Kemmerly, Jamie Phillips and Steven Durbin, 10<sup>th</sup> Edition McGraw Hill, 2023
2. "Electrical and Electronic Technology" E. Hughes (Revised by J. Hiley, K. Brown & I.M Smith), 12<sup>th</sup> Edition, Pearson Education, 2016.



# THANK YOU

---

**Jyothi T.N**

Department of Electrical & Electronics Engineering  
**jyothitn@pes.edu**