



# **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**

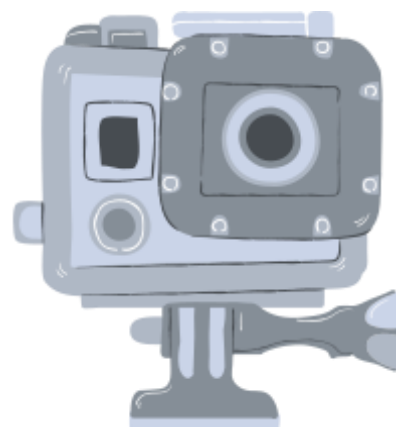
**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**COURSE NAME: 19EET207/ SYNCHRONOUS AND INDUCTION  
MACHINES**

**II YEAR / IV SEMESTER**

**Unit 2 – SYNCHRONOUS MOTOR**

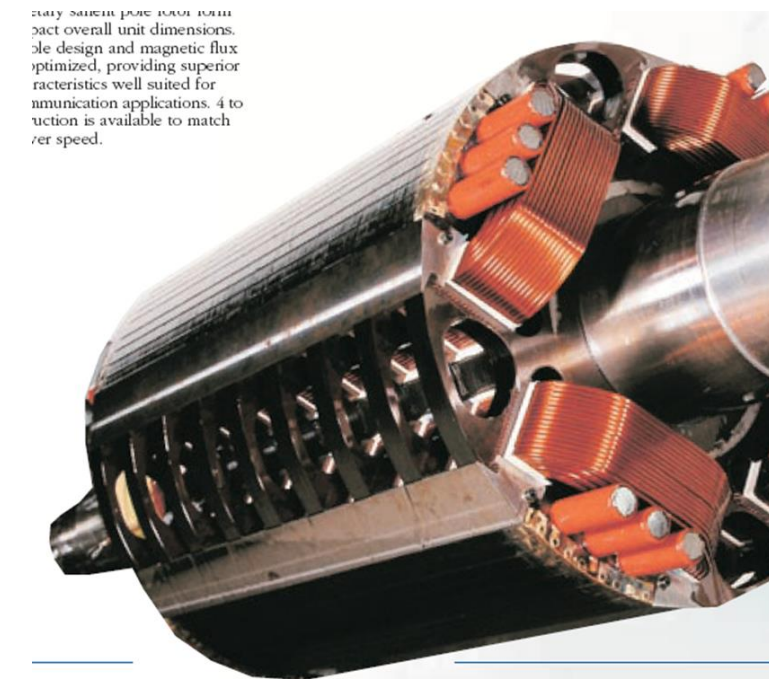
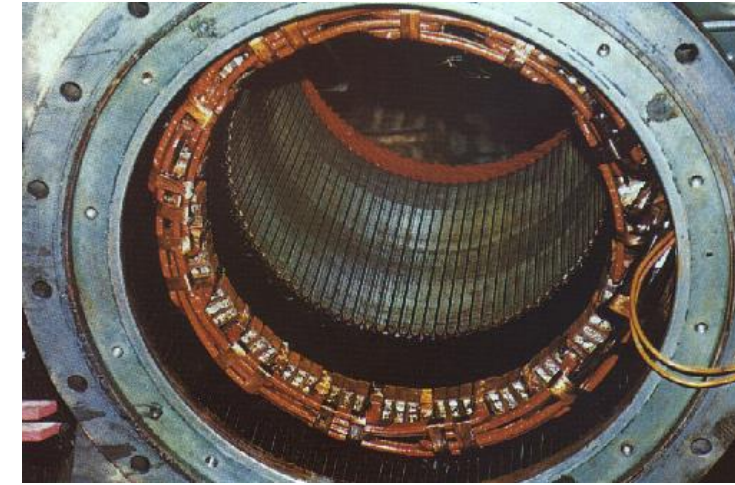
**Topic 4: V and Inverted V curves**





# GUESS THE TOPIC NAME...

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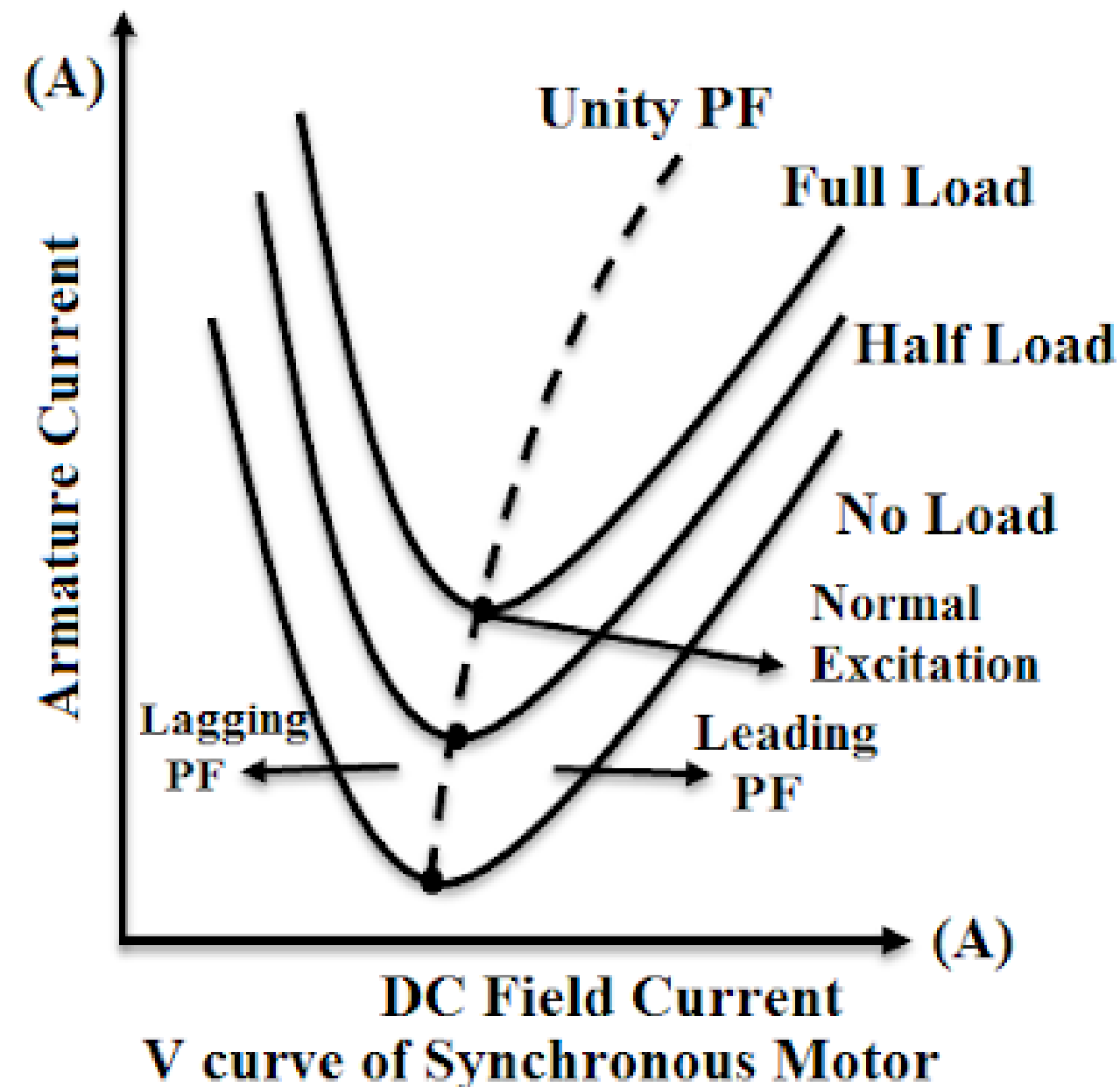




# V curves

V-Curve of a synchronous motor shows the variation of armature current  $I_a$  with excitation for the same input, at no-load, half full-load, and full-load.

- From V-Curves it is observed that the armature current has large values both for low and high values of excitation ( though it is lagging for low excitation and leading for higher excitation ).
- In between, it has a minimum value corresponding to the unity power factor ( normal excitation )



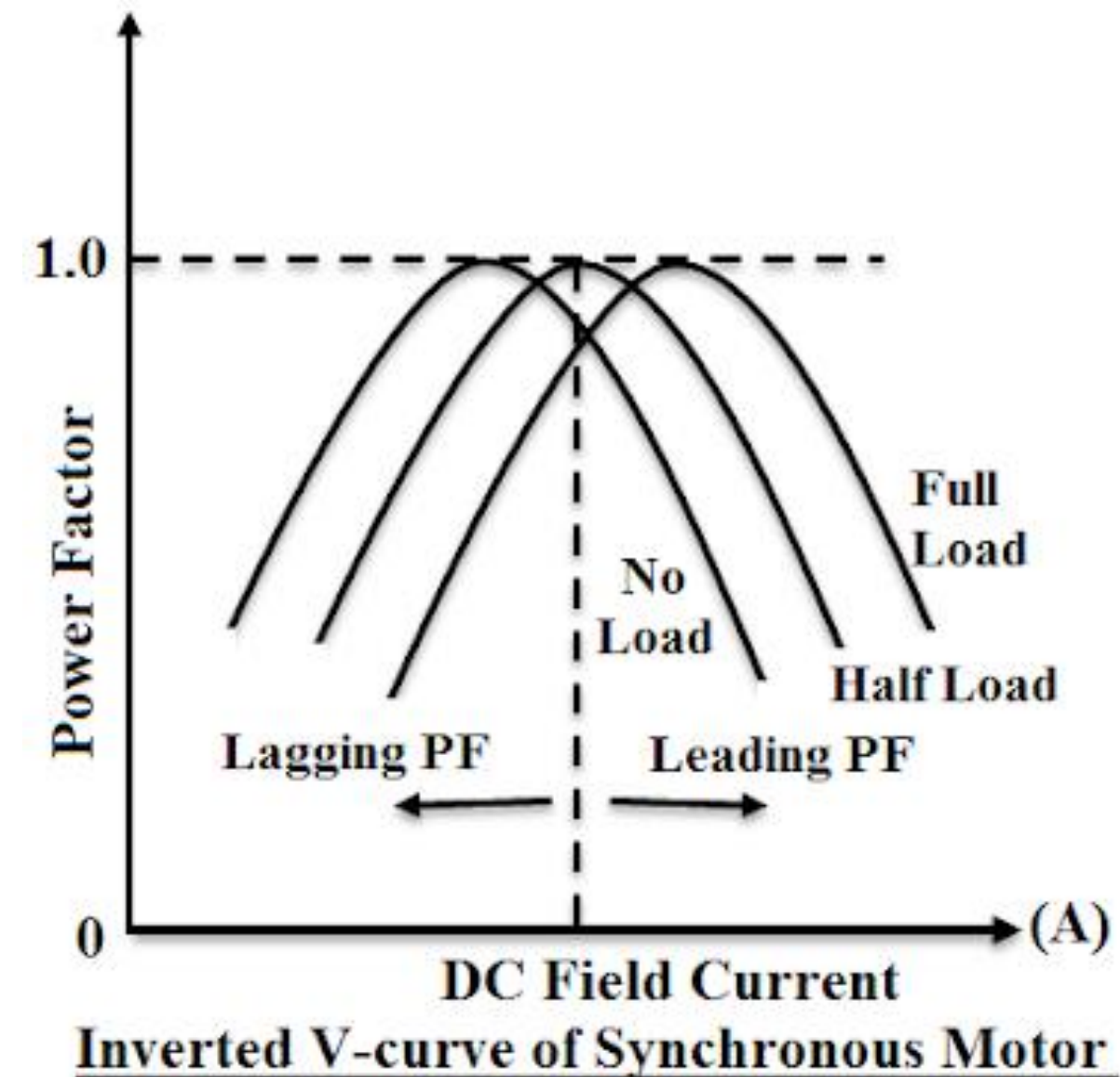




# Inverted V curves

If the power factor is plotted against excitation for various load conditions, we obtain a set of curves known as ' Inverted V-Curves

- The inverted V-Curves of synchronous motor shows how the [power factor varies](#) with excitation.
- From inverted V-curves, it is observed that the power factor is lagging when the motor is under excited and leading when it is over-excited.
- In between, the power factor is unity





# SUMMARY

Torque Equation, pull out torque



KEEP  
LEARNING..  
**Thank u**

SEE YOU IN NEXT CLASS