

## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Electronics and Communication Engineering - NOC:Power Electronics Applications in Power

Subject Co-ordinator - Prof. Sanjib Ganguly

Co-ordinating Institute - IIT - Guwahati

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Basic Concepts of active and reactive power
- Lecture 2 - Basic Concepts of reactive power compensation
- Lecture 3 - Basic mathematical modelling of power transmission systems
- Lecture 4 - Derivation of the relation of sending and receiving end voltages and currents - Part A
- Lecture 5 - Derivation of the relation of sending and receiving end voltages and currents - Part B
- Lecture 6 - Derivations of power flow expressions
- Lecture 7 - Numerical example showing determination of power flow
- Lecture 8 - Generalized expression for active and reactive power at any point of a long line
- Lecture 9 - Mid-point voltage and current for long, lossless transmission lines
- Lecture 10 - Plot of mid-point voltage vs line loading
- Lecture 11 - Numerical example of mid-point compensation - Part A
- Lecture 12 - Numerical example of mid-point compensation - Part B
- Lecture 13 - Effect of Mid-point compensation on power flow of transmission lines
- Lecture 14 - Thyristor controlled reactor (TCR)
- Lecture 15 - Harmonics in TCR and Three-phase TCR configuration
- Lecture 16 - Operating Characteristics of TCR
- Lecture 17 - Categorization of different types of SVC and Fixed capacitor TCR (FC-TCR)
- Lecture 18 - Mechanically Switched Capacitor TCR (MSC-TCR) and Thyristor Switch Capacitor (TSC)
- Lecture 19 - Thyristor Switch Capacitor (TSC)
- Lecture 20 - Design of TSC-TCR: Numerical Example
- Lecture 21 - SVC in enhancement of steady-state power transmission capacity
- Lecture 22 - SVC in enhancement of transient stability of power systems
- Lecture 23 - SVC in enhancement of synchronizing power coefficient
- Lecture 24 - SVC in and power system oscillation damping
- Lecture 25 - SVC in voltage control of power systems: Modelling
- Lecture 26 - SVC in voltage control of power systems: Control characteristics
- Lecture 27 - SVC in voltage control of power systems: Numerical example
- Lecture 28 - Basic operating principle of TCSC
- Lecture 29 - Basic mathematical modelling of TCSC - Part 1

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- Lecture 30 - Basic mathematical modelling of TCSC - Part 2
- Lecture 31 - TCSC reactance and harmonics analysis
- Lecture 32 - Applications of TCSC in power systems
- Lecture 33 - Basic mathematical modelling of STATCOM
- Lecture 34 - Applications of STATCOM in power systems
- Lecture 35 - Basic mathematical modelling of SSSC
- Lecture 36 - Applications of SSSC in power systems