

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

NPTEL Video Course - Electrical Engineering - NOC:Electric Vehicles - Part 1

Subject Co-ordinator - Prof. Amit Jain

Co-ordinating Institute - IIT - Delhi

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

Lecture 1 - Intro EV Historical Background
Lecture 2 - Intro EV Benefits of Using EVs
Lecture 3 - Intro EV Overview of types of EVs and its Challenges
Lecture 4 - Intro EV Motor Drive Technologies
Lecture 5 - Intro EV Energy Source Technologies
Lecture 6 - Intro EV Battery Charging Technologies
Lecture 7 - Intro EV Vehicle to Grid
Lecture 8 - Intro EV Subsystems and Configurations
Lecture 9 - Intro HEV Subsystems and Configurations
Lecture 10 - Intro HEV Subsystems and Modes of Operation
Lecture 11 - Vehicle Dynamics intro and tractive effort
Lecture 12 - Vehicle Dynamics Simulation and dynamic equation
Lecture 13 - Vehicle Dynamics Simulation dynamic equation constant Fte
Lecture 14 - Vehicle Dynamics dynamic equation variable Fte
Lecture 15 - Vehicle Dynamics simulation dynamic equation variable Fte
Lecture 16 - Vehicle Dynamics Modelling and simulation in Simulink
Lecture 17 - Summary Electric Vehicles - Part 1 Course
Lecture 18 - Basics of DC Motor Drive
Lecture 19 - Realization of DC Chopper
Lecture 20 - Open Loop Operation of Chopper Fed DC Motor Drive
Lecture 21 - Review of Control Theory
Lecture 22 - Modeling and Current Controller Design for Separately Excited DC Motor Drive
Lecture 23 - Speed Controller Design and Performance Evaluation of DC Motor Drive
Lecture 24 - Fundamentals of Three Phase Induction Motor
Lecture 25 - Equivalent Circuit and Torque-Speed Characteristics of Induction Motor
Lecture 26 - Starting and Speed Control of Induction Motor
Lecture 27 - Realisation of DC to AC Power Converter
Lecture 28 - Impact of Non-Sinusoidal Voltage on Induction Motor
Lecture 29 - Selective Harmonic Elimination and Optimal Pulse Width Modulation Techniques

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- Lecture 30 - Switching Energy Losses and Sine-Triangle PWM
- Lecture 31 - Analysis of Sine-Triangle PWM
- Lecture 32 - Simulation Studies on Open Loop Induction Motor Drive
- Lecture 33 - Modeling of Cylindrical Rotor Machine
- Lecture 34 - Modeling of Surface Mounted PMSM Drive
- Lecture 35 - Sensorless Vector Control of PMSM Drive
- Lecture 36 - Dynamic Modeling of Squirrel Cage Induction Machine - Part 1
- Lecture 37 - Dynamic Modeling of Squirrel Cage Induction Machine - Part 2
- Lecture 38 - Controller Design for RFO Vector Controlled IM Drive
- Lecture 39 - Estimation of Rotor Flux Vector and Mechanical Speed
- Lecture 40 - Case Study - Indian Railway Propulsion System
- Lecture 41 - Simulation Exercise - PMSM and IM Drives
- Lecture 42 - Basics of Electromagnetic Circuit
- Lecture 43 - SRM and BLDC Motor Drives - Part 1
- Lecture 44 - SRM and BLDC Motor Drives - Part 2