

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

NPTEL Video Course - Metallurgy and Material Science - NOC:Ironmaking and Steelmaking

Subject Co-ordinator - Prof. Gour Gopal Roy

Co-ordinating Institute - IIT - Kharagpur

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

- Lecture 1 - Introduction
- Lecture 2 - Various Routes of steelmaking
- Lecture 3 - The Iron Blast Furnace
- Lecture 4 - Thermodynamics of BF ironmaking
- Lecture 5 - Thermodynamics of BF Ironmaking (Continued...)
- Lecture 6 - Overall Heat and Material Balance in Blast Furnace
- Lecture 7 - RIST Diagram based on overall heat and material balance
- Lecture 8 - RIST Diagram based on heat and material balance in the Wustite Reserve Zone
- Lecture 9 - Kinetics of gas solid reaction
- Lecture 10 - Kinetics of gas solid reaction
- Lecture 11 - Aerodynamics in Blast Furnace - Part 1
- Lecture 12 - Aerodynamics in Blast Furnace - Part 2
- Lecture 13 - Aerodynamics in Blast Furnace - Part 3
- Lecture 14 - Coke rate and Fuel efficiency in Blast Furnace
- Lecture 15 - oxygen enrichment of blast
- Lecture 16 - Blast Furnace and it's Raw Material
- Lecture 17 - Sintering of Iron Ore
- Lecture 18 - Pelletization of Iron Ore
- Lecture 19 - Coking Process
- Lecture 20 - Testing of Burden Material
- Lecture 21 - Burden Distribution
- Lecture 22 - Blast Furnace products and their utilization
- Lecture 23 - Blast Furnace Productivity
- Lecture 24 - Modeling of Blast Furnace
- Lecture 25 - New Potential Technologies for Blast Furnace
- Lecture 26 - History of Steelmaking
- Lecture 27 - Properties of slag
- Lecture 28 - The Reaction Equilibria Unlisted
- Lecture 29 - Dephosphorization of liquid steel

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- Lecture 30 - Kinetics of slag metal reaction
- Lecture 31 - LD steelmaking
- Lecture 32 - LD Steel making
- Lecture 33 - Evolution of impurities in steel and slag constituents during LD processing
- Lecture 34 - Hybrid Processes
- Lecture 35 - Electric steel making
- Lecture 36 - Secondary Steel making
- Lecture 37 - Secondary Steel making
- Lecture 38 - Secondary Steel making
- Lecture 39 - Homogenization and Gas stirred ladle
- Lecture 40 - Ladle de-sulphurization, alloying, stainless steel making
- Lecture 41 - Inclusion and its control
- Lecture 42 - Injection Metallurgy
- Lecture 43 - Cored wire injection-Modeling, melting sequence, effect of operating parameters
- Lecture 44 - IM
- Lecture 45 - IM
- Lecture 46 - Casting fundamentals- Heat Transfer
- Lecture 47 - Casting fundamentals- segregation
- Lecture 48 - Morphology of solidification structure and Ingot casting
- Lecture 49 - Continuous casting
- Lecture 50 - Downstream processing and near net shape casting
- Lecture 51 - Introduction to Direct Reduction (DR) and smelting Reduction (SR) Processes
- Lecture 52 - Introduction to Direct Reduction (DR) and smelting Reduction (SR) Processes (Continued...)
- Lecture 53 - Coal Based DR Processes
- Lecture 54 - Coal Based DR Processes (Continued...)
- Lecture 55 - Gas based DR Processes
- Lecture 56 - Gas based DR Processes (Continued...)
- Lecture 57 - Smelting Reduction (SR) Processes
- Lecture 58 - Smelting Reduction (SR) Processes (Continued...)
- Lecture 59 - Ironmaking and Steelmaking in India
- Lecture 60 - Ironmaking and Steelmaking in India (Continued...)