

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

NPTEL Video Course - Metallurgy and Material Science - NOC:Modeling of Tundish Steelmaking Process in Continuous Casting

Subject Co-ordinator - Dr. Pradeep K. Jha

Co-ordinating Institute - IIT - Roorkee

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

- Lecture 1 - Introduction to Continuous Casting Process
- Lecture 2 - Role of Tundish in Continuous Casting
- Lecture 3 - Types of Continuous Casting Machine
- Lecture 4 - Components of Continuous Casting Unit
- Lecture 5 - Tundish Metallurgy
- Lecture 6 - Introduction to Physical Modeling
- Lecture 7 - Concept of Similarity in Physical Modeling
- Lecture 8 - Dimensional analysis
- Lecture 9 - Physical Modeling of Isothermal and Non-Isothermal system
- Lecture 10 - Consideration in Aqueous Modeling
- Lecture 11 - Introduction to Stimulus Response Techniques
- Lecture 12 - Characterization of Flow
- Lecture 13 - Characterization of Flow in Actual Systems
- Lecture 14 - Analysis of RTD Curves
- Lecture 15 - Plug, Mixed and Dead Regions in Tundish
- Lecture 16 - Fluid Flow Fundamentals
- Lecture 17 - Mass Conservation Equation
- Lecture 18 - Momentum Conservation Equation
- Lecture 19 - Energy Conservation Equation
- Lecture 20 - Navier Stokes Equations for Newtonian Fluid
- Lecture 21 - Introduction to Turbulence in Fluid Flow
- Lecture 22 - Characteristics of Turbulent Flow
- Lecture 23 - RANS Equations
- Lecture 24 - Turbulent Flow Calculations
- Lecture 25 - Turbulence Modeling Using k- ϵ Model
- Lecture 26 - Introduction to Heat Transfer Phenomena
- Lecture 27 - Numerical Methods for Solving Governing Equation
- Lecture 28 - Finite Volume Method for Convection and Diffusion Problems
- Lecture 29 - Different Discretization Schemes

Get Digi-MAT (Digital Media Access Terminal) For High-Speed Video Streaming of NPTEL and Educational Video Courses in LAN

www.digimat.in

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

- Lecture 30 - Assessment of Discretization Schemes
- Lecture 31 - Elements of Mathematical Modeling in Tundish Steelmaking
- Lecture 32 - Boundary Conditions
- Lecture 33 - Flow Analysis in Tundish
- Lecture 34 - Analysis of Fluid Flow and Mixing in Tundish
- Lecture 35 - Non-isothermal Flow Considerations in Tundish
- Lecture 36 - Intermixing in Tundish
- Lecture 37 - Modeling Consideration For Inclusion Removal in Tundish - I
- Lecture 38 - Modeling Consideration For Inclusion Removal in Tundish - II
- Lecture 39 - Case Studies in Modeling of Tundish Steelmaking - 1
- Lecture 40 - Case Studies in Modeling of Tundish Steelmaking - 2