

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

NPTEL Video Course - Mechanical Engineering - NOC:Steel Quality - Role of Secondary Refining and Continuous C

Subject Co-ordinator - Prof. Santanu Kr. Ray

Co-ordinating Institute - IIT - Madras

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

Lecture 1 - Concept of Steel Quality

Lecture 2 - Control of Residuals and Impact on Quality

Lecture 3 - Non-Metallic Inclusions

Lecture 4 - Evaluation of Residuals and Inclusions

Lecture 5 - Cleanliness Requirements for Different applications

Lecture 6 - Limitation of Primary Steelmaking and Importance of secondary Refining

Lecture 7 - Deoxidation

Lecture 8 - Prevention of Slag carryover

Lecture 9 - Desulphurisation

Lecture 10 - Degassing

Lecture 11 - Secondary Refining Processes

Lecture 12 - Injection of Calcium

Lecture 13 - Different Routes and Temperature Control

Lecture 14 - Decarburisation

Lecture 15 - Cleanliness Measures in Ladle and Tundish

Lecture 16 - Cleanliness Measures in Mould

Lecture 17 - Nature and Distribution of Entrapments in Casting

Lecture 18 - Genesis of Entrapment

Lecture 19 - Effect of Vertical vis-a-vis Curved Mould

Lecture 20 - Quality of Cast Product

Lecture 21 - Role of Concast Process, Caster Design and Steel Grade

Lecture 22 - Primary Cooling in Caster Mould

Lecture 23 - Heat Transfer in Mould

Lecture 24 - Role of Mould Oscillation

Lecture 25 - Cast Structure and Dendrite Size

Lecture 26 - Role of Chemistry - Part I

Lecture 27 - Role of Chemistry - Part II

Lecture 28 - Role of Segregation - Part I

Lecture 29 - Role of Segregation - Part II

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

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- Lecture 30 - Deleterious Effect of Phosphorus
- Lecture 31 - Strength of Solidifying Strand
- Lecture 32 - Brittle Zone Near Solidus
- Lecture 33 - Strength and Toughness of Solid Shell
- Lecture 34 - Role of Chemistry on Solidification Behaviour
- Lecture 35 - Sticking vis-a-vis Depression Behaviour
- Lecture 36 - Role of Chemistry on Bulging or Depression Tendency - Part I
- Lecture 37 - Role of Chemistry on Bulging or Depression Tendency - Part II
- Lecture 38 - Effect of Cast Grain Size
- Lecture 39 - Brittle Temperature Regions
- Lecture 40 - Typical Cracks and Defects - Part I
- Lecture 41 - Typical Cracks and Defects - Part II
- Lecture 42 - Remedial Measures to Control Defects - Part I
- Lecture 43 - Remedial Measures to Control Defects - Part II
- Lecture 44 - Remedial Measures to Control Defects - Part III
- Lecture 45 - Grade - Specific Casting Parameters - Part I
- Lecture 46 - Grade - Specific Casting Parameters - Part II
- Lecture 47 - Identification of Genesis of Quality Problems Through Metallographic Investigation - Part I
- Lecture 48 - Identification of Genesis of Quality Problems Through Metallographic Investigation - Part II
- Lecture 49 - Identification of Genesis of Quality Problems Through Metallographic Investigation - Part III