

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

NPTEL Video Course - Chemical Engineering - NOC:Rheology and Processing of Paints, Plastic and Elastomer Base

Subject Co-ordinator - Prof. Santanu Chattopadhyay

Co-ordinating Institute - IIT - Kharagpur

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

- Lecture 1 - Basic Introduction to Polymer
- Lecture 2 - Structure Process Correlation
- Lecture 3 - Basic Rheology
- Lecture 4 - Classification of Fluids
- Lecture 5 - Flow of Liquids Through Various Channels - 1
- Lecture 6 - Flow of Liquids Through Various Channels - 2
- Lecture 7 - Flow of Liquids Through Various Channels - 3
- Lecture 8 - Introduction to Viscometers and Rheometers
- Lecture 9 - Ostwald Viscometer, Brookfield Viscometer, Falling Piston Viscometers
- Lecture 10 - ODR, MDR, RPA, PPR
- Lecture 11 - DMA -In-Light of rheology
- Lecture 12 - Master Curve and its Implications
- Lecture 13 - Capillary Rheometer
- Lecture 14 - Introduction to Paints and importance of rheology in paints
- Lecture 15 - Rheology of paints - 1
- Lecture 16 - Rheology of paints - 2
- Lecture 17 - Rheology of Adhesives and Sealants
- Lecture 18 - Rheology of Fiber and Plastics
- Lecture 19 - Practical demonstration on Brookfield viscometer and Oswald viscometer
- Lecture 20 - Practical demonstration on Mooney viscometer, ODR and MDR
- Lecture 21 - Practical demonstration on RPA
- Lecture 22 - Practical demonstration on PPR and DMA
- Lecture 23 - Practical demonstration on Capillary Rheometer
- Lecture 24 - Numerical Problems related to basic rheology
- Lecture 25 - Importance of compounding and introduction to various compounding ingredients
- Lecture 26 - Properties and role of various compounding ingredients
- Lecture 27 - Surface treatment of reinforcing elements
- Lecture 28 - Rheology of Elastomers
- Lecture 29 - Importance of die swell (correlating with normal force differences)

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- Lecture 30 - Melt Fracture and other extrudate instabilities
- Lecture 31 - Introduction to plastic and rubber mixing and blending
- Lecture 32 - Various mixing equipment and their importance
- Lecture 33 - Introduction to Two-Roll Mill and Mixing on Two - Roll Mill 1
- Lecture 34 - Introduction to Two-Roll Mill and Mixing on Two - Roll Mill 2
- Lecture 35 - Introduction to Internal mixture Kneaders and Mixing using Internal mixture and Kneaders
- Lecture 36 - Practical demonstration of Rubber mixing on a two roll and using an internal mixer
- Lecture 37 - Molding Techniques
- Lecture 38 - Calendering
- Lecture 39 - Extrusion
- Lecture 40 - Rheology of Injection moulding process
- Lecture 41 - Plastic and fiber-related processing
- Lecture 42 - Numerical problems related to various processing techniques
- Lecture 43 - Wire coating, Garvey die, Profile Extrusion
- Lecture 44 - Introduction to FEA based computational fluid mechanics on extrusion - 1
- Lecture 45 - Introduction to FEA based computational fluid mechanics on extrusion - 2
- Lecture 46 - Introduction to FEA based computational fluid mechanics on extrusion - 3
- Lecture 47 - Practical demonstration on FEA
- Lecture 48 - Concluding remarks and comments on applied rheology for advanced learners