

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

NPTEL Video Course - Chemical Engineering - NOC:Rheology of Complex Materials

Subject Co-ordinator - Dr. Abhijit P. Deshpande

Co-ordinating Institute - IIT - Madras

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

Lecture 1 - Flow phenomena in complex materials and Microstructure - 1  
Lecture 2 - Flow phenomena in complex materials and Microstructure - 2  
Lecture 3 - Applications of rheology  
Lecture 4 - Applications of rheology  
Lecture 5 - Applications of rheology  
Lecture 6 - Applications of rheology  
Lecture 7 - Stress and strain rate - 1  
Lecture 8 - Stress and strain rate - 2  
Lecture 9 - Velocity gradient and strain rate - 1  
Lecture 10 - Velocity gradient and strain rate 1 Stress and strain rate - 3  
Lecture 11 - Kinematics for simple flows - 1  
Lecture 12 - Kinematics for simple flows - 2  
Lecture 13 - Introduction to tensors  
Lecture 14 - Rheometric flows  
Lecture 15 - Viscous response - 1  
Lecture 16 - Viscous response - 2  
Lecture 17 - Viscoelasticity - Relaxation process  
Lecture 18 - Viscoelasticity - Maxwell model  
Lecture 19 - Linear viscoelasticity - oscillatory shear - 1  
Lecture 20 - Linear viscoelasticity - oscillatory shear - 2  
Lecture 21 - Introduction to tensors - 2  
Lecture 22 - Introduction to tensors - 3  
Lecture 23 - Rheometers - 1  
Lecture 24 - Rheometers - 2  
Lecture 25 - Rheometers - 3  
Lecture 26 - Rheometers - 4  
Lecture 27 - Rheometers - 5  
Lecture 28 - Governing equations for rheology - 1  
Lecture 29 - Governing equations for rheology - 2

---

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

[www.digimat.in](http://www.digimat.in)

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

---

- Lecture 30 - Relaxation time spectrum - 1
- Lecture 31 - Relaxation time spectrum - 2
- Lecture 32 - Linear viscoelasticity
- Lecture 33 - Time temperature superposition
- Lecture 34 - Linear viscoelasticity
- Lecture 35 - General linear viscoelasticity
- Lecture 36 - Rotational rheometry
- Lecture 37 - Review of material functions - 1
- Lecture 38 - Review of material functions - 2
- Lecture 39 - Survey of material functions for polymers - 1
- Lecture 40 - Survey of material functions for polymers - 2
- Lecture 41 - Survey of material functions for polymers - 3
- Lecture 42 - Survey of material functions for polymers - 4
- Lecture 43 - Survey of material functions for multiphase systems - 1
- Lecture 44 - Strain and convected rate - 1
- Lecture 45 - Strain and convected rate - 2
- Lecture 46 - Strain and convected rate - 3
- Lecture 47 - Strain and convected rate - 4
- Lecture 48 - Normal stresses - 1
- Lecture 49 - Normal stresses - 2
- Lecture 50 - Structured materials - yield stress
- Lecture 51 - Yield stress and thixotropic materials
- Lecture 52 - Normal stresses and stress growth
- Lecture 53 - Rheometer demonstration
- Lecture 54 - Review of material functions - 3
- Lecture 55 - Survey of material functions for multiphase macromolecular systems
- Lecture 56 - Problems during rheometry - example of cone and plate - 1
- Lecture 57 - Problems during rheometry - example of cone and plate - 2
- Lecture 58 - Strain, convected derivatives, non-linear models - 1
- Lecture 59 - Strain, convected derivatives, non-linear models - 2
- Lecture 60 - Rheometer demonstration
- Lecture 61 - Microscopic modeling of rheology - 1
- Lecture 62 - Microscopic modeling of rheology - 2
- Lecture 63 - Live Session