

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

NPTEL Video Course - Metallurgy and Material Science - NOC:Fracture, Fatigue and Failure of Materials

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Co-ordinating Institute - IIT - Kharagpur

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

- Lecture 1 - Modes of Fracture
- Lecture 2 - Theoretical Strengths and Defects
- Lecture 3 - Stress Concentration
- Lecture 4 - Griffith Criterion
- Lecture 5 - Griffith Criteria - Modification
- Lecture 6 - Stress Intensity Factor
- Lecture 7 - Fracture Toughness and Plane Stress-Plane Strain
- Lecture 8 - Plastic Zone Size
- Lecture 9 - Plane stress and plane strain fracture toughness
- Lecture 10 - Plane stress and plane strain fracture toughness (Continued...)
- Lecture 11 - Plane Strain Fracture Toughness Testing
- Lecture 12 - Plane Strain-Plane Stress Fracture Toughness Testing
- Lecture 13 - Plane Stress Fracture Toughness
- Lecture 14 - Plane Stress fracture toughness-J integral
- Lecture 15 - Experimental determination of JIC
- Lecture 16 - J-integral and JIC
- Lecture 17 - Impact Toughness
- Lecture 18 - Impact Toughness (Continued...)
- Lecture 19 - Impact Toughness (Continued...)
- Lecture 20 - Impact Toughness (Continued...)
- Lecture 21 - Impact Toughness (Continued...)
- Lecture 22 - Fracture Toughness
- Lecture 23 - Fracture Toughness (Continued...)
- Lecture 24 - Fracture Toughness (Continued...)
- Lecture 25 - Fracture Toughness (Continued...)
- Lecture 26 - Fracture Toughness (Continued...)
- Lecture 27 - Environment Assisted Fracture
- Lecture 28 - Environment Assisted Fracture (Continued...)
- Lecture 29 - Environment Assisted Fracture (Continued...)

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- Lecture 30 - Introduction to Fatigue
- Lecture 31 - Stress Controlled Fatigue
- Lecture 32 - Stress Controlled Fatigue (Continued...)
- Lecture 33 - Stress Controlled Fatigue (Continued...)
- Lecture 34 - Stress Controlled Fatigue (Continued...)
- Lecture 35 - Strain Controlled Fatigue (Continued...)
- Lecture 36 - Strain Controlled Fatigue (Continued...)
- Lecture 37 - Strain Controlled Fatigue (Continued...)
- Lecture 38 - Strain Controlled Fatigue (Continued...)
- Lecture 39 - Fatigue Crack Nucleation
- Lecture 40 - Notch Effect
- Lecture 41 - Crack in Fatigue
- Lecture 42 - Fatigue Crack Propagation
- Lecture 43 - Fatigue Crack Propagation (Continued...)
- Lecture 44 - Fatigue Crack Propagation (Continued...)
- Lecture 45 - Fatigue Crack Propagation (Continued...)
- Lecture 46 - Fatigue Crack Propagation (Continued...)
- Lecture 47 - Fatigue Crack Propagation (Continued...)
- Lecture 48 - Fatigue in Materials
- Lecture 49 - Fatigue in Materials (Continued...)
- Lecture 50 - Effect of Temperature on Fatigue
- Lecture 51 - Failure Analysis
- Lecture 52 - Failure Analysis (Continued...)
- Lecture 53 - Failure Analysis (Continued...)
- Lecture 54 - Failure Analysis - Case study - Titanic
- Lecture 55 - Failure Analysis - Case Study - ALK
- Lecture 56 - Failure Analysis - Case study - Point Pleasant Bridge
- Lecture 57 - Failure Analysis - Case Study - Rail Crash
- Lecture 58 - Failure Analysis - Case Study - Comet
- Lecture 59 - Failure Analysis - Case Study - Columbia
- Lecture 60 - Failure Analysis - Summary