



## Mechanisms of Time-Dependent Materials - Basics to Advance Approach

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Engineering plastics have seen increased demand due to their durability, high performance, and potential to replace metals. This presentation will be focused on the factors influencing the time-dependent mechanical response, with a detailed discussion on the optimized phase-correlated performance of polymer systems. The underlying theory of the time-dependent mechanical behaviour of polymer moieties will be explored, and several key issues will be discussed in the context of current applications. The talk will be specifically centered on mechanical engineering aspects such as wear, coefficient of friction, creep, Young's modulus, and Hooke's law. Additionally, the external control of polymer composite systems—considering influences such as electric fields, temperature, and DC bias—will be examined in detail. The role of molecular orientation as a time-dependent function will be reviewed based on various dielectric models.

### Biography of Professor Dr. Girish M. Joshi



**Prof. Dr. Girish Mukundrao Joshi** is presently a full professor in Engineering Physics and Materials at tICT Mumbai off-campus Marathwada Jalna, of Maharashtra state. He has 20+ Years of teaching experience. He is a visiting scientist at UCLM, Spain (2009, 2016). He published 150 articles in reputed international journals and is credit with two granted patents. APA life member (2024). Fellow of the Maharashtra Academy of Sciences (2019). Life fellow of the Indian Chemical Society (2021). National Best Teacher awarded by Krishnamurthy Trust, Tirupati (2017). He was famous teacher in VIT Vellore (2010-2018). He produced seven doctorates and currently working four. He executed four research projects as chief investigator Naval Research Board (NRB), DRDO and Dover India Industry and Savitri printer Nashik, CSR-UGC-DAE Industry Joint seal, Jalna. Presently he is on Editorial Board of Modern Plastic India Magazine. He is Expert Board Member for the Journal of *Physica scripta* -IOP. He is BOS member for SRTMU, Nanded and ICT Mumbai. Recently he is appointed as Academic council member at DBATU, Lonere, Maharashtra (2023-26). Appointed as expert member for innovation, incubation and start cell by CIPET, Aurangabad (2024) . Best professor awarded by Modern Plastic India (2024).