**Predavanje - Quantitative methods to evaluate fatigue damage post-failure**

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**Summary:**

A large amount of fatigue life research and numerous fracture analyses have been conducted to assess alterations linked with the damage mechanism. Nonetheless, there are presently no established guidelines for the fractographical evaluation of fatigue damage, and attempts are underway to identify appropriate methods or modify existing ones. As a result, this research examines two effective post-failure methods for detecting and measuring damage. Fracture surface topography analysis, known as FRASTA, has been applied to address numerous failure issues. This quantified fractographic method was initially applied in the early 1980s and has continually been enhanced alongside advancements in computing and measurement techniques. To comprehend how a material behaves under stress, particularly in fatigue situations, the second approach is referred to as the "entire fracture surface method" in materials science. This technique consists of examining the complete surface of a fracture, or the parameters of the fractured surface. This method assists in predicting fatigue life and understanding fatigue behaviors.

**CV:**

Has published over 100 scientific papers in international journals according Scopus Elsevier database. The focus in published scientific research is on fatigue fracture surface analysis. He gave invited lecture in Department of Industrial and Mechanical Engineering, University of Brescia (Italy), November 2023. Held scientific and research internships in University of Coimbra (Portugal), November 2021 - December 2021, VSB – Technical University of Ostrava (Czechia), June 2024 – July 2024, and in Sapienza University of Rome (Italy), February 2025 – July 2025. He is Peer Reviewer for dozens international journals, i.e. Engineering Failure Analysis (56), Measurement (54), International Journal of Fatigue (43) and others.