



INDIAN SOCIETY FOR NON-DESTRUCTIVE TESTING (BENGALURU CHAPTER)

*ISNT Bengaluru chapter is pleased to host its
Virtual Technical Webinar
on*

Non Destructive Approach to assess Industrial Problems in Engineering Sectors (Residual Stress / Creep Life / Wear Resistance)

Dr. P. Sampathkumaran

Ph.D -Mat Sc - Univ of Mysore, Retd. Joint Director CPRI -Ministry of Power

Date & Time : Saturday, Nov 5th 2022 @ 5.00pm

ABSTRACT

It is known that the engineering components are susceptible to various types of damages such as fatigue, creep, wear, corrosion, embrittlement etc., as they are exposed to in-service and environmental conditions. To predict their healthiness as well as structural integrity, the non-destructive test methods have taken the lead role in recent years compared to conventional methods. In this context, the onset of residual stress parameter measured using non-invasive techniques contributes to damage occurrence in a part or product. The ultrasonic detection is proved to be useful tool in the field for life prediction analysis of engineering parts especially high temperature components. These methods serve as a quality assurance measures, problem solving exercises and failure studies.

Keeping the above aspects in mind, the NDE methods have been explored to i) measure and analyze residual stress in materials or components by X ray Diffraction and Magnetic Barkhausen techniques followed by typical case studies, ii) creep life estimation of boiler tubes using ultrasonic method, iii) characterization of wear resistant using acoustic velocity iv) investigation of failures. These issues have been addressed in this on line webinar presentation.

About the Speaker

Dr. P. Sampathkumaran is a Ph.D (Mat Sc) Univ of Mysore, Master's in Physics - Bangalore Univ. He joined CPRI Bangalore in 1978 and served for 35 years and retired as Joint Director & Head, Materials Technology Division of CPRI, Govt of India Society, Ministry of Power.

He is a Technical Advisor in (NDRF) National Design Research Forum, The Institute of Engineers India Karnataka State Centre and executive member of Indian Carbon Society.

His area of research interests are Materials Engineering & Characterization, Structure property correlations, Tribology, Residual Stress Measurements & Analysis, Life prediction of Power Plant Components, Material developments for Wear, Friction and damping applications, Abrasion Index of Coal, Failure Analysis Investigations, Computational Modelling & Analysis, Mechanical Testing.

He has to his credit 4 Patents / 80 articles / 100 papers / 15 technical reports and Nearly 35 Consultancy / sponsored projects. He has guided over 150 Students in their Ph.D / Mtech /Btech. He has received Dr. APJ Abdul Kalam Life Time Achievement National Award for teaching, Publications and Research in 2019 conformed by IISER and received many other awards and recognitions.



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