



SPECIAL SESSION

RAILWAY

ORGANIZED AND CHAIRED BY: Michele Carboni, Marco Sarti, Enrico Testa

ORGANIZATION: Politecnico di Milano, Italian Society For Non-Destructive Testing Monitoring Diagnostics, Alstom Ferroviaria S.p.A.

CONTACT EMAIL: michele.carboni@polimi.it, marco.sarti57@gmail.com, enrico.testa@alstomgroup.com

OBJECTIVE AND TOPICS:

Non-Destructive Testing (NDT) and Structural Health Monitoring (SHM) of railway components is a key enabler for the safe, reliable, and sustainable operation of high-density and high-quality rail services. Increasing train speeds, loadings, traffic density, and changing environmental conditions require innovative inspection methods and continuous adaptation of materials, design and inspection approaches.

From this point of view, we invite contributions to this Special Session dedicated to the most recent advances and challenges in NDT and SHM for the railway field. The session will cover both rolling stock (axles, wheels, bogie frames, etc.) and infrastructure (rail tracks, bridges, concrete structures, etc.).

This session aims to:

- address modern challenges in non-destructive testing of wheelsets and other critical components in both manufacturing and maintenance
- showcase new developments and applications in railway NDT and SHM
- foster interdisciplinary exchange between academia, industry and operators, enabling extended networking and collaboration

We welcome both research contributions and industrial case studies.

Areas of interest include, but are not limited to:

- Non-destructive testing in railway manufacturing and maintenance processes
- In-service structural health monitoring
- Advanced and novel techniques
- Data processing and visualization techniques
- Application of NDE 4.0 to railway systems

All the instructions for paper submission are included in the conference website: <https://www.ecndt2026.org>
