VERONA, 15-19 JUNE

ECNDT 2026 14th

EUROPEAN CONFERENCE ON NON-DESTRUCTIVE TESTING

SPECIAL SESSION

Custom pulsing for ultrasonic NDT

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OBJECTIVE AND TOPICS: The Special session will be focused on the application of arbitrary waveform generator (AWG) in non-destructive testing (NDT), highlighting how custom waveforms can enhance inspection sensitivity, penetration depth, and enable advanced signal processing strategies. Topics will include design principles for the emitted arbitrary waveforms, parameter optimization for specific materials and defect types and post-processing methods such as matched filters, pulse compression, and correlation analysis. Topics can also include comparative performance assessments between arbitrary waveforms and conventional short-pulse techniques, probe design from single-element to phased-array systems, hardware integration aspects, and the practical challenges of implementing and using the AWG in real inspection environments.

Areas of interest include, but are not limited to:

- Inspection of complex geometries.
- Air-coupled and contact-based ultrasonic inspections.
- Enhancement of resolution and sensitivity through custom waveform excitation.
- Image reconstruction.
- Applications in challenging industrial environments.
- Novel research areas combining AWG excitation with advanced signal processing techniques.

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