

Welcome!

Ralf Zeiberts

MR[®] CHEMIE
NDT-MATERIALS

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GmbH

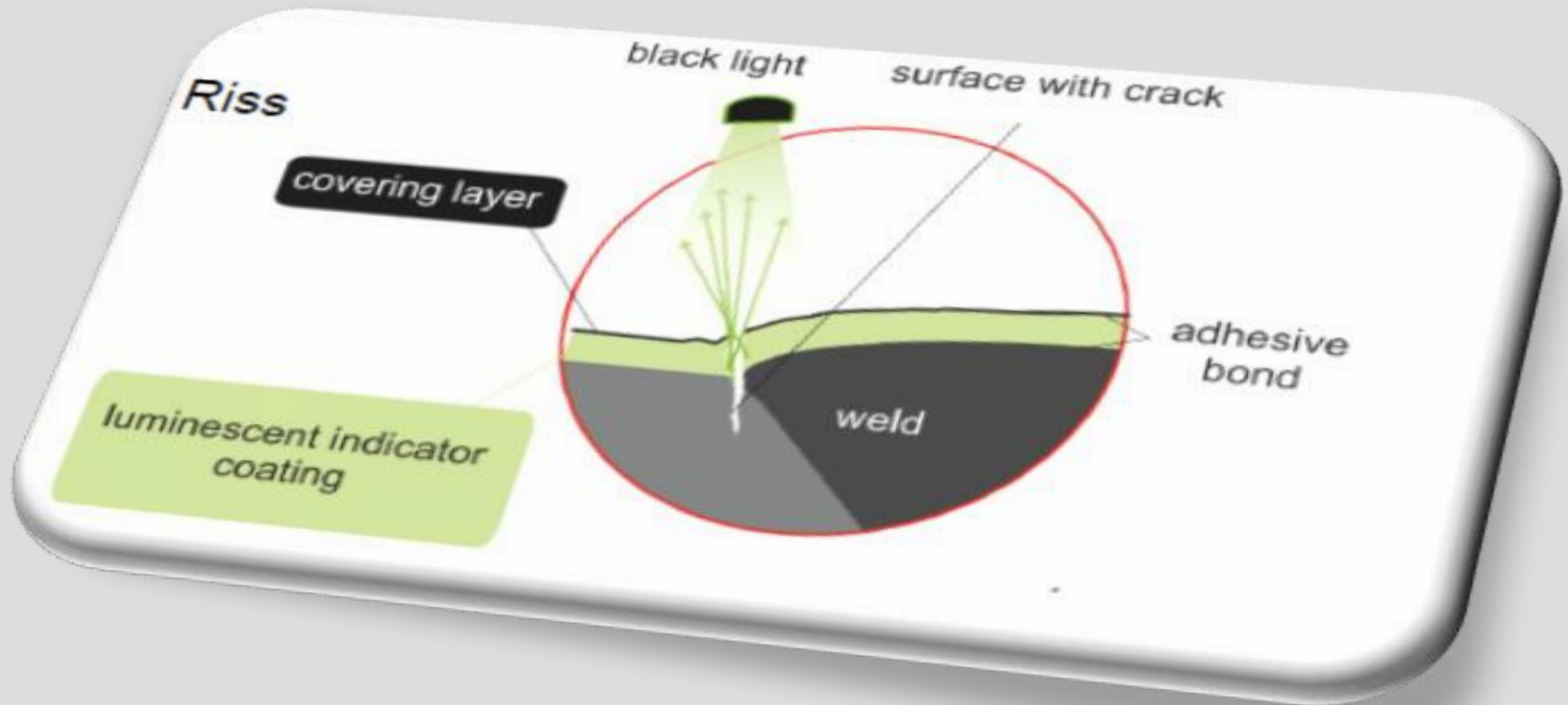
MR 158-R GE

NETPULVER-
SUSPENSION



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NEW METHOD FOR EARLY DETECTION OF FATIGUE CRACKS



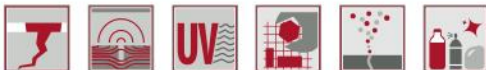


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a license product of

AGENDA

- *Target*
- *Advantages*
- *Comparison*
- *Application areas*
- *Usage*
- *Examples*





Project goal:

Development of a special coating for the detection and monitoring of Fatigue cracks until product maturity

- Reliable, efficient and early detection of cracks
- Use in the long-term monitoring of critical areas in relation to fatigue stress using the example of bridge structures
- Experimental determination of incipient crack-load alternation during fatigue tests (laboratory)

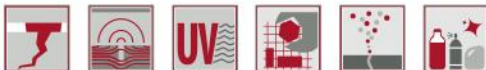




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Advantages

- Less effort compared to MPI or FPI (one-time coating)
- Monitoring does not require any special knowledge
- Large-scale control
- Inspection of running machines or in trial operation possible
- Use in difficult to access or dangerous areas
- Remote monitoring, as cracks are visible to the eye or a conventional camera and UV light





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Application areas

What

Steel

clean underground

not paintable

Who

Neuralgic, crack-prone areas

protected indoor areas

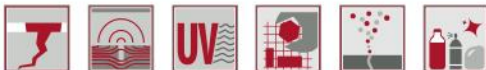
mechanically unloaded

By which

Resistances

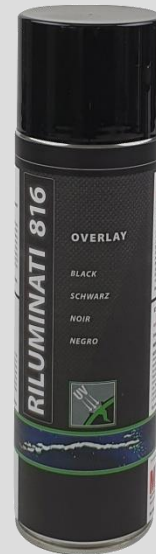
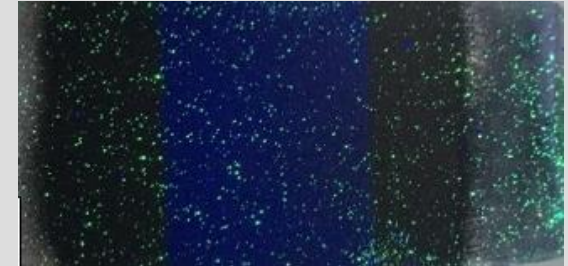
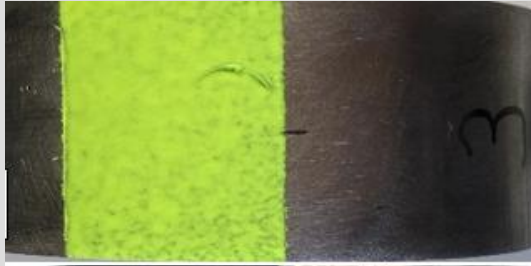
compatible with dust

Tolerance to light moisture



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Usage

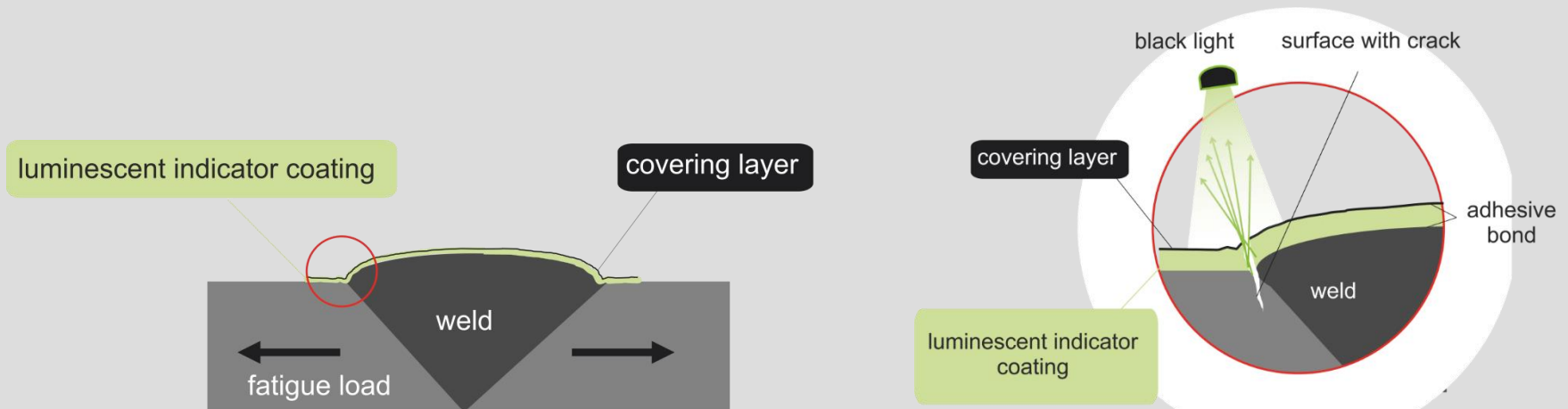


Two layers:

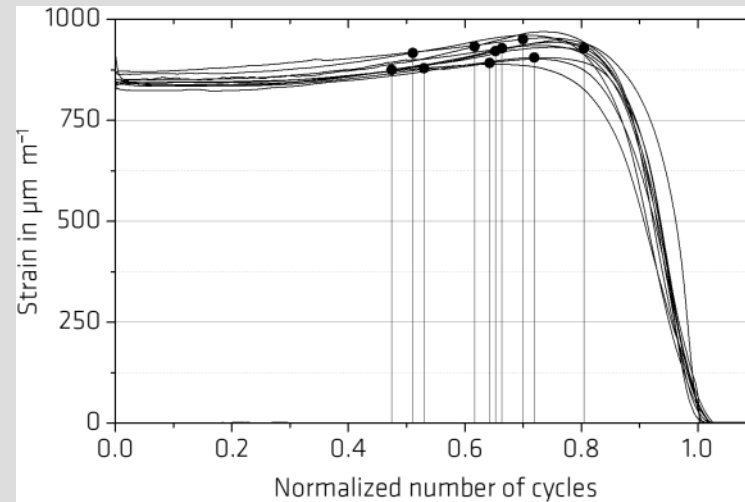
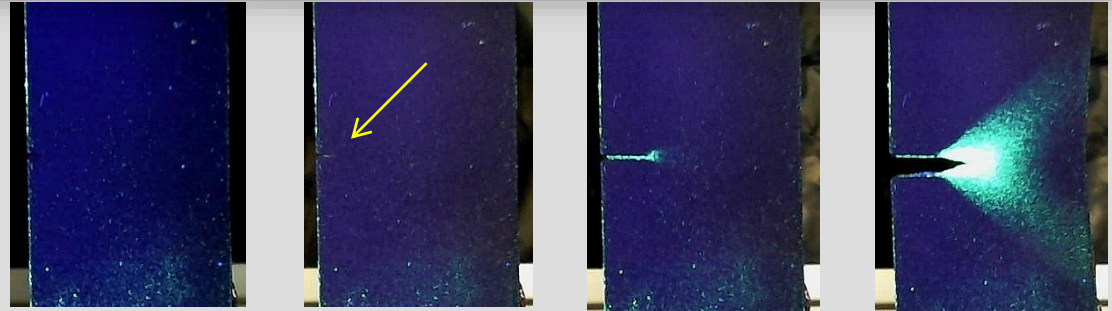
1. RILUMINATI 815 Indicator layer fluorescent

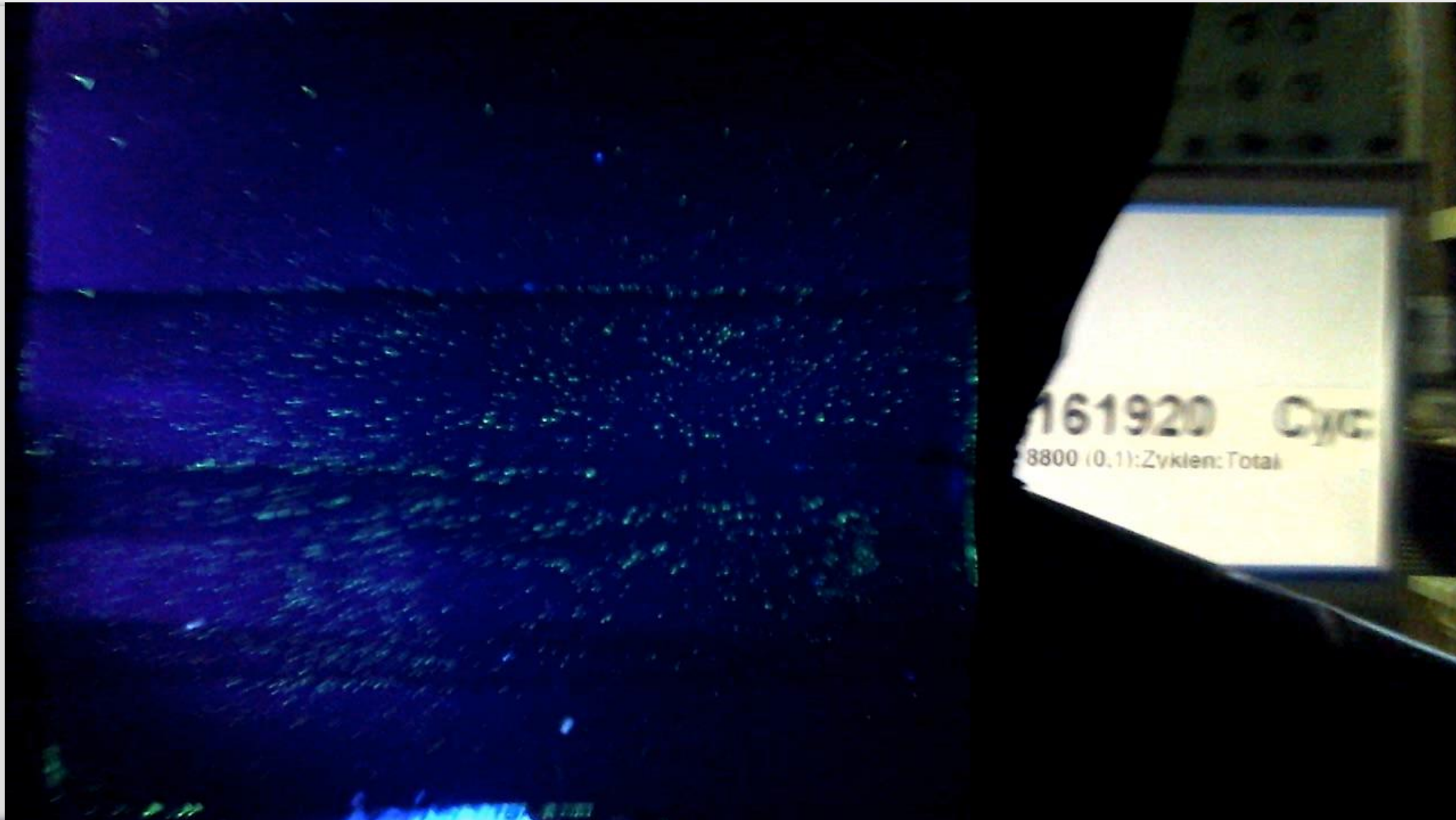
2. RILUMINATI 816 Overlay black

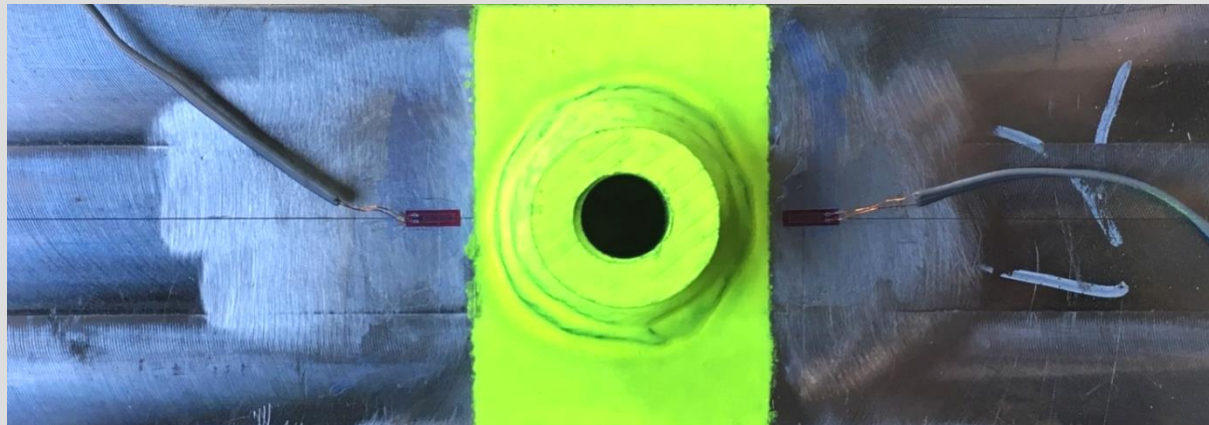
- Both layers rip at the stage of fatigue crack inception.
- Under UV-light the crack contour will appear as yellow-green indication

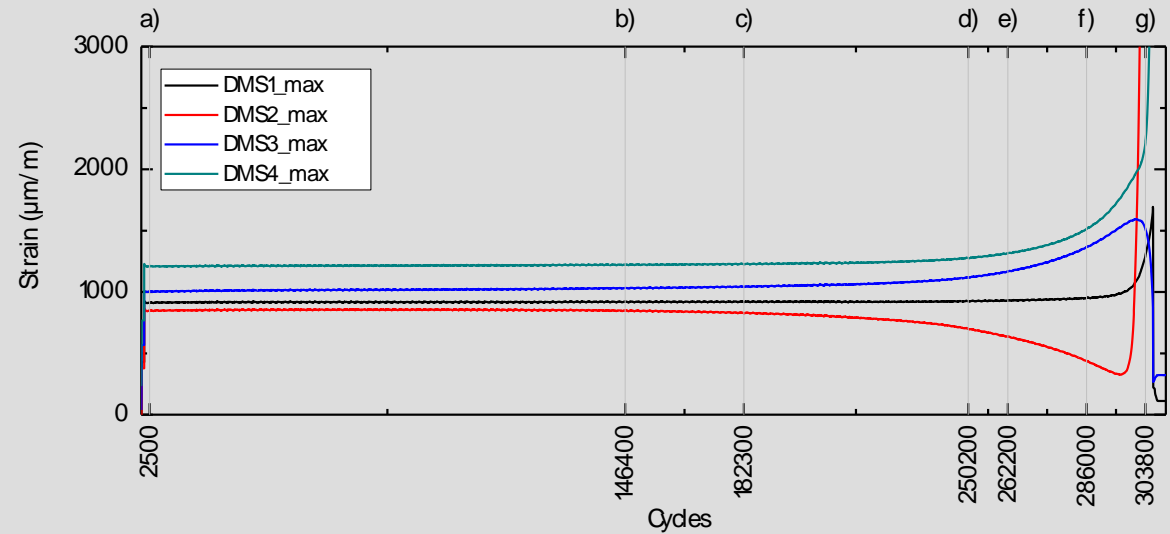


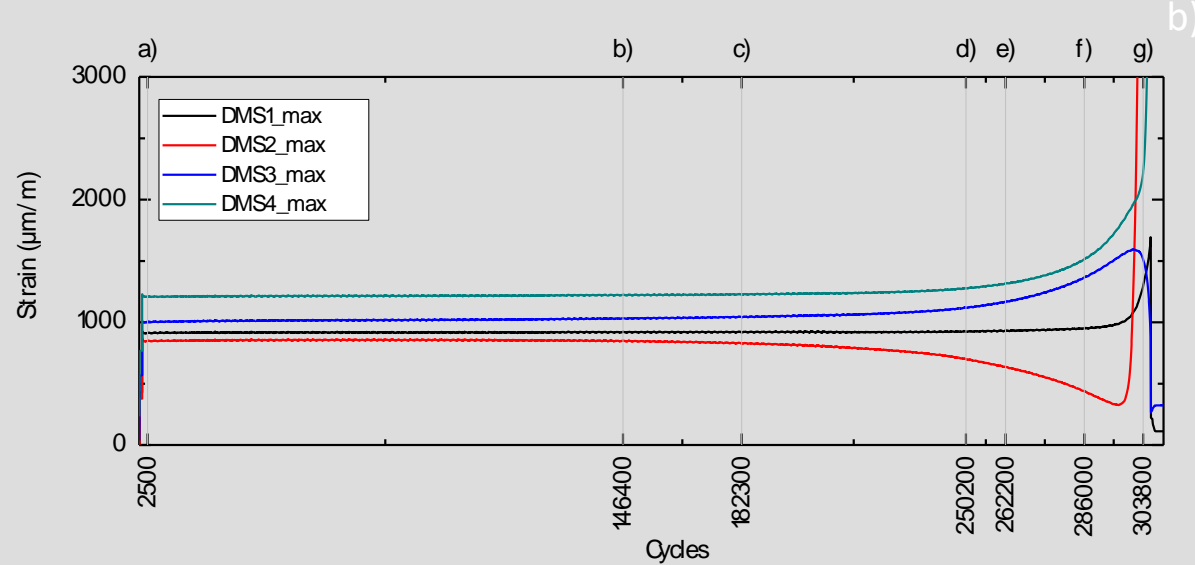
Examination of sensitivity and long-term stability

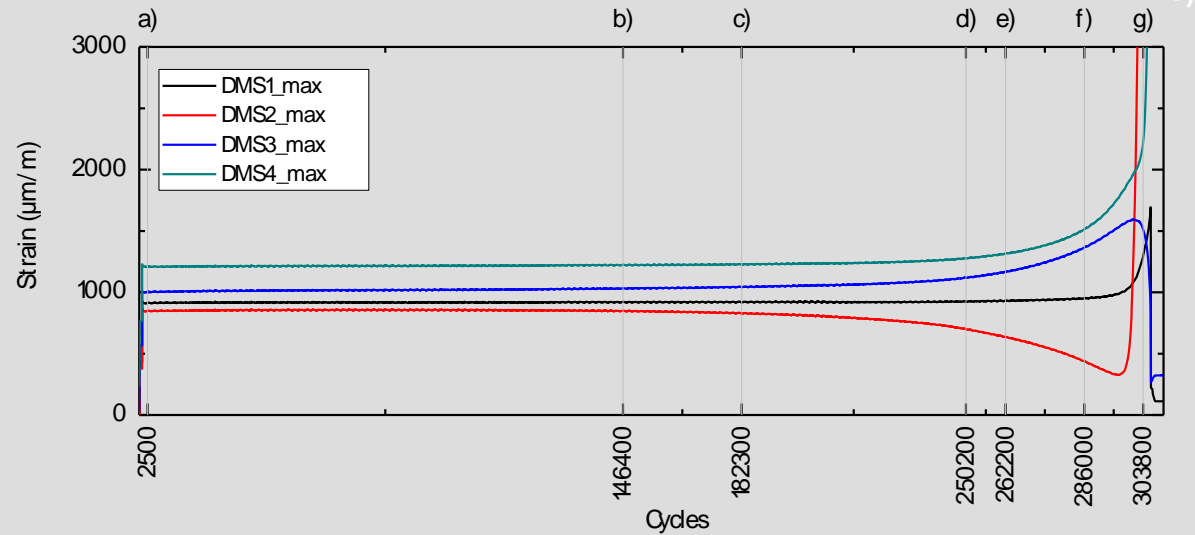
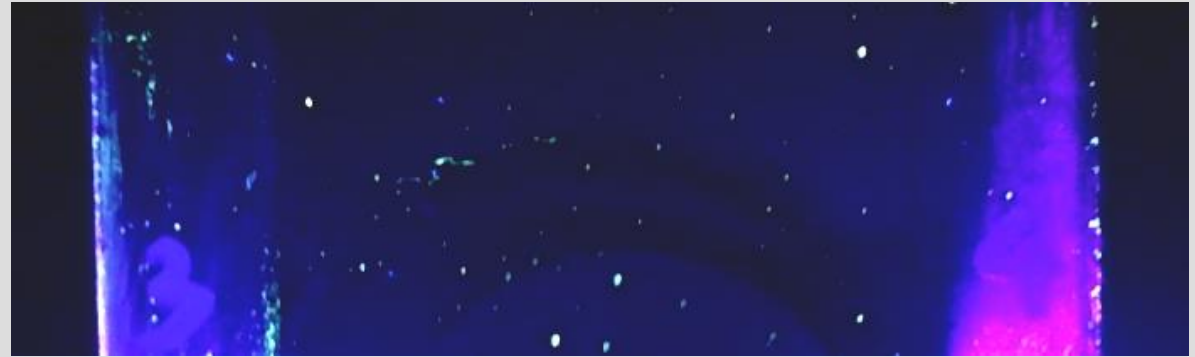


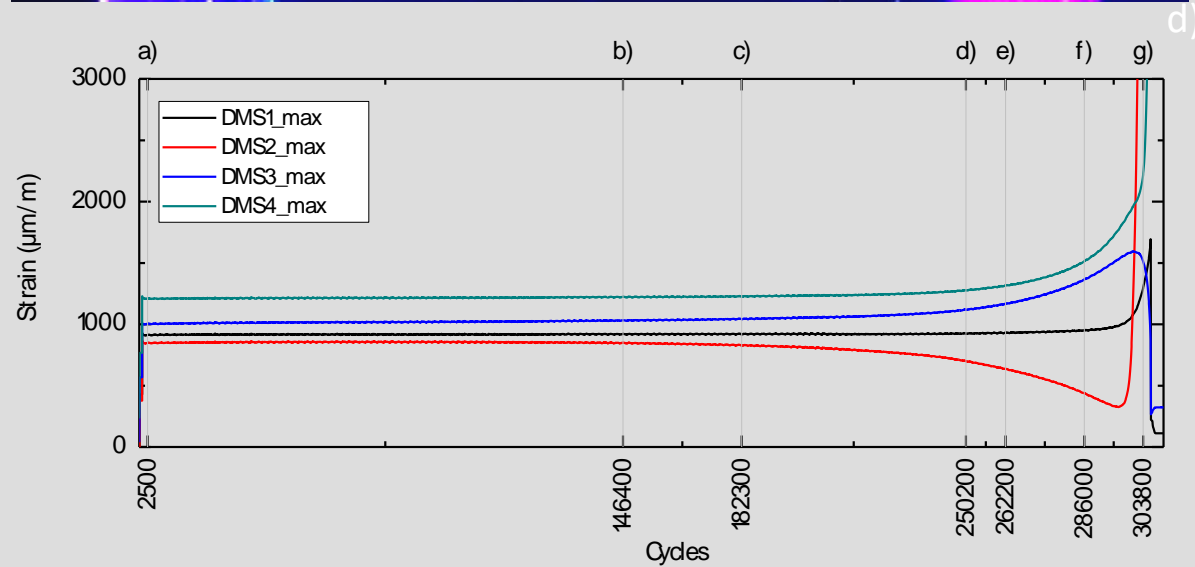


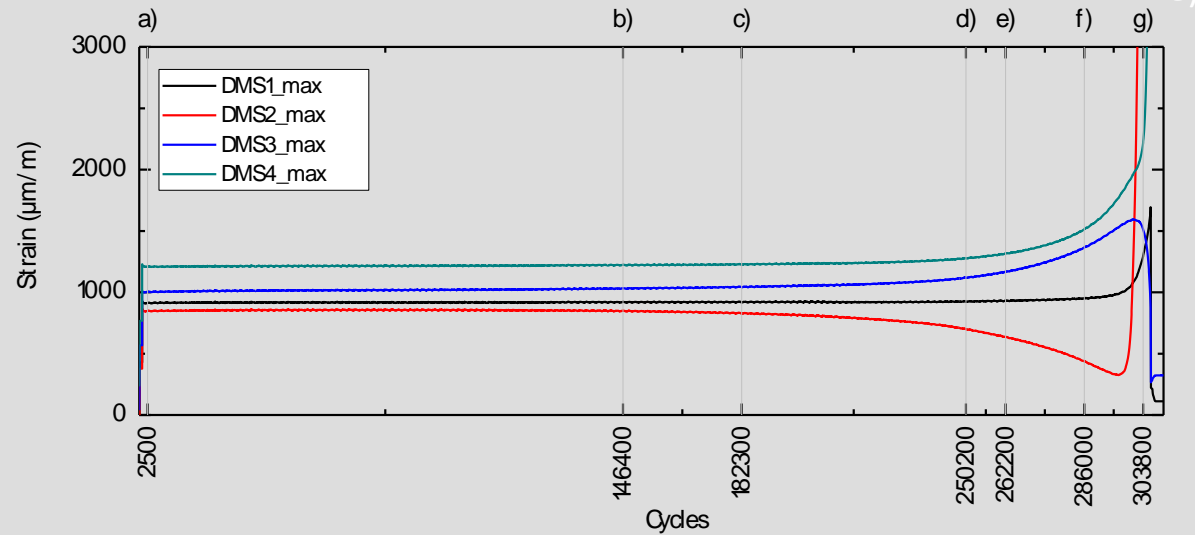
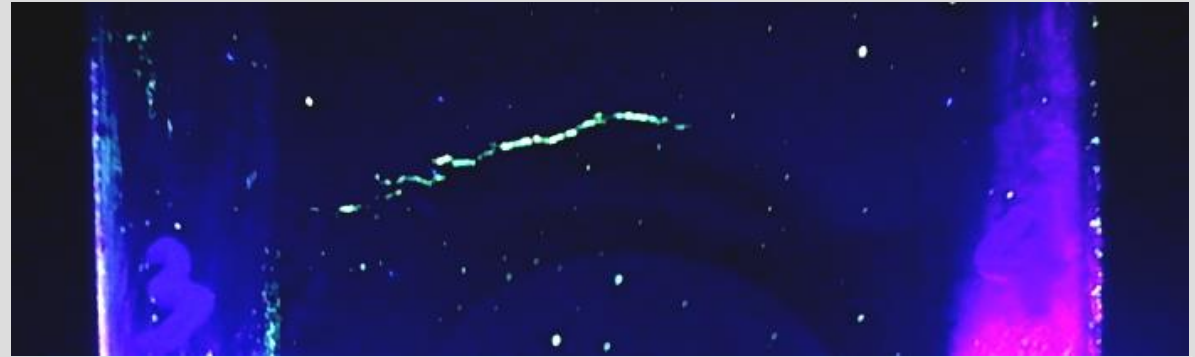


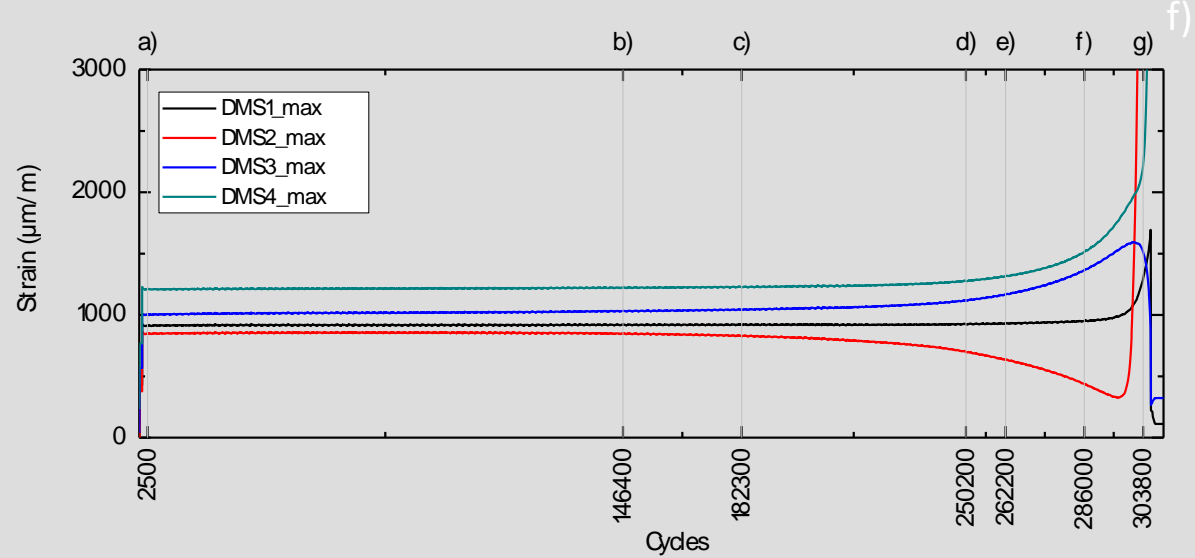
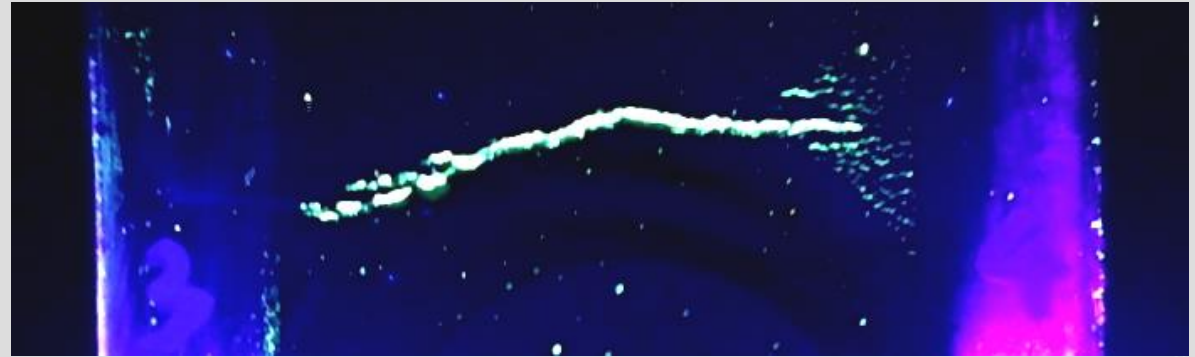


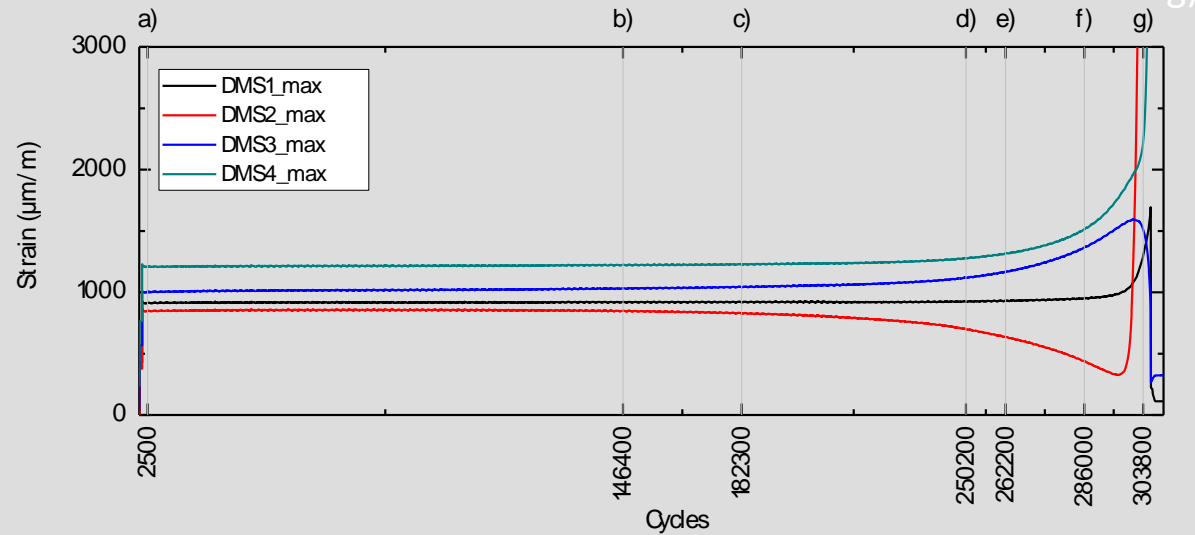






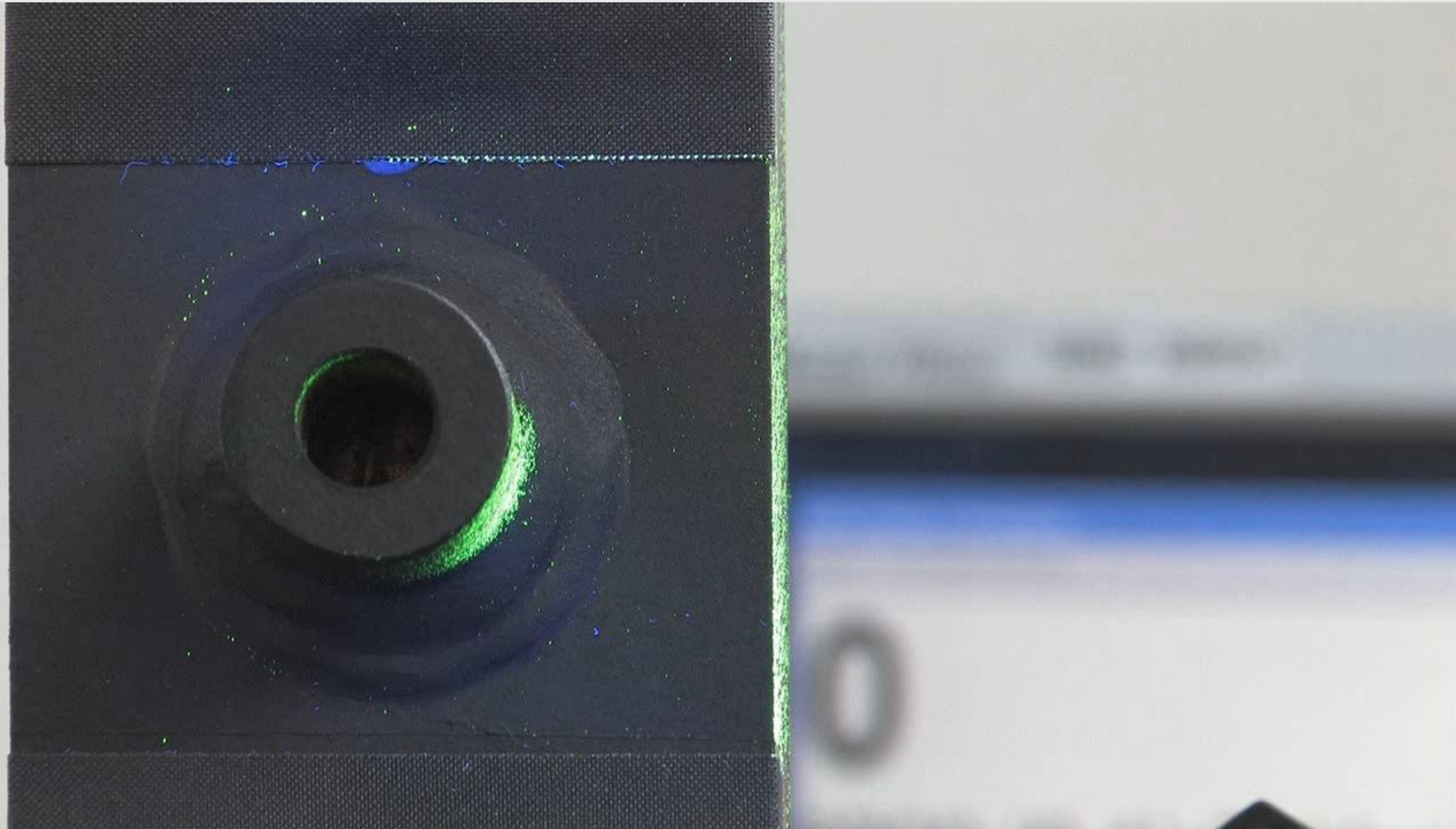






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Example of application – slug weldings



Pre-cleaning of the inspection areas with Surface Cleaner



Example of application – Tramway Bogie

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After applying the indicator layer Riluminati 815



Example of application – Tramway Bogie

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After applying the Riluminati 816 overlay



Example of application – Tramway Bogie

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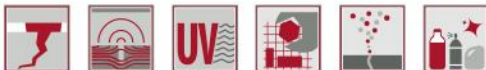
After applying the Riluminati 816 overlay



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Materialforschung
und -prüfung



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Questions?