

PRESS RELEASE

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Noncontact and contamination-free materials inspection – hybrid materials easily tested

In automotive industry weight reduction is realized by concepts of light and composite construction with bonded joints. For this purpose, non-destructive testing (NDT) methods take a key role as because of their high sensitivity they can be used in safety-relevant areas, e.g. in the joint area, where damage and defects may lead to component malfunction. Especially such NDT methods are requested that can easily be automated and at same time allow cost-efficient inspection of components and assemblies.

From 17 to 27 September 2015, at 66. IAA Pkw in Frankfurt, engineers of Fraunhofer IZFP in Saarbrücken will introduce a procedure which enables noncontact and contamination-free defect inspection even in case of strongly absorbing hybrid materials (hall 4.0, booth D27).

Researchers at Fraunhofer Institute for Nondestructive Testing IZFP in Saarbrücken succeeded in enhancing the use of air-coupled ultrasound as a nondestructive inspection method for noncontact and contamination-free materials inspection. “The probes we developed at our institute to examine thin materials allow higher frequency compared to competing products. Due to this improvement a highly sensitive and optimized defect detection capability is achieved,” Dr. Thomas Waschkes, responsible engineer at Fraunhofer IZFP, explains. “The improved probe design with its higher noise allows the contamination-free examination even of strongly absorbing hybrid materials.”

Each inspection application comes with its specific requirements concerning accessibility, defect resolution, robustness against environmental influences and special probe type. That’s why Fraunhofer IZFP’s air-coupled ultrasound transducers are custom-made for a particular application.

The air-coupled ultrasound inspection is particularly suitable for the examination of thin plates with thicknesses of some few centimeters. However, in principle all materials currently used in modern structural components, e. g., in automotive industry or aircraft, can be examined. Often, these so-called ‘new materials’, such as CFRP, GFRP, high-strength steels and light metals, are combined and processed to hybrid components or parts.

PR Officer / Editorial Notes:

Dipl.-Übers. Sabine Poitevin-Burbes | Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren IZFP | Phone +49 681 9302-3869 | Campus E3.1 | 66123 Saarbrücken, Germany | www.izfp.fraunhofer.de | sabine.poitevin-burbes@izfp.fraunhofer.de

FRAUNHOFER INSTITUTE FOR NONDESTRUCTIVE TESTING IZFP



Air-coupled ultrasound: An industrial robot linked to an ultrasound inspection system scans the component.
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For further information:

Dr.-Ing. Thomas Waschkies | Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren IZFP | Phone +49 681 9302-3637 | Campus E3.1 | 66123 Saarbrücken | www.izfp.fraunhofer.de | thomas.waschkies@izfp.fraunhofer.de