VRANA
NDE CONSULTING & SOLUTIONS

Vrana GmbH – NDE Consulting & Solutions

Dr. Johannes Vrana

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Company Profile Summary

VRANA
NDE CONSULTING & SOLUTIONS

Vrana GmbH offers:

Top quality and independent consulting of businesses in the area of Non-Destructive Evaluation (NDE)

as well as

support for research and development projects

and

development of innovative software solutions.

Vrana GmbH:

- Specialized on the "high end" questions regarding Non-Destructive Evaluation (NDE)
- With an international network of high skilled professionals
- Offers as an integrated whole well-founded testing experience with up-to-date scientific and IT background

- Consulting at its best for the optimal solution of your problems.

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What does Vrana GmbH offer?

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NDE Research & Development

- Support and lead of
  - R&D projects
  - Standardization and reglementation activities
  - Creation and harmonization of specifications, procedures and other documents
  - Projects regarding probability of detection (POD)
- Independent survey reports and root cause analyses

NDE Systems

- Assistance during procurement of NDE systems
  - Selection and validation of fitting inspection methods and techniques
  - Creation of requirement specifications
  - Qualification and commissioning of NDE equipment and automated systems
- Qualification of the nondestructive testing at your suppliers

NDE Software Solutions

- Planning, project development and implementation of
  - Smart/Big data analysis tools
  - Algorithms for data analysis and data reconstruction
  - Simulation tools
  - Software for NDE systems

NDE Services

- Training of testing personnel and instruction into testing procedures
- Level III services (external level III)
- Personnel certification (ASNT) & authorization (ISO 9712)

Dr. Vrana's Experience

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CV

- CEO of Vrana GmbH
- Physicist with PhD in NDE (Induction Thermography)
- Former Siemens inspection supervisor
- 10 years experience from QA to R&D
- Specialized in Ultrasonics, Thermography, IT, QM
- Director of German ASNT Section
- Member in multiple NDT expert committees
- ASNT Level III
- Languages (German, English, un poquito Español)

Programs Led

- Implementation of SAFT, EFIT and PA
- Qualification of automated inspection systems
- International harmonization of specifications
- Database development for statistical evaluation of NDE data
- Development of automated inspection systems
- Probability of Detection (PoD)
- Root cause analysis
- Probabilistic fracture mechanics

Dr. Vrana's experience covers the wide range
from inspection supervisor to research specialist.

Experience in the Network

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Research & Development

- Collaboration with
  - Experienced partners
  - Manufacturers of automated inspection systems
  - Universities
  - Research Institutes
  - Research and Development Departments
  - Federal Agencies
- Amongst others for:
  - X-Ray and X-Ray Computed Tomography
  - Eddy current
  - Metallurgy
  - Fracture mechanics

Software Development

- Vrana GmbH has a network with selected software developers for:
  - Reconstruction algorithms
  - Simulation algorithms
  - Database design
  - Frontend design
  - Analysis tools
  - …

Testing

- Multiple collaboration companies with experienced
  - Level III personnel
  - Level I and II inspectors
- For testing and source assurance
- RT, UT, ET, IT, MT, PT

Dr. Johannes Vrana
Awards & Popular Science Articles about his Work

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Awards

2016:

Werner von Siemens Awards

- “Top 15” of all Ingenuity Projects
- Topic: Ultrasonic Computed Tomography

2015:

U.S. Excellence Awards

- Honorable Mention for Ingenuity
- Topic: Probabilistic Fracture Mechanics

Popular Science Articles

”Transparent Turbine“

Pictures of the Future (2016)

- English: http://sie.ag/1qiNrli
- Deutsch: http://sie.ag/1Zwlu4u

“The Transparent Shaft”

Siemens YouTube Channel (2016)

- English: https://youtu.be/2nok1MPHCfg
- Deutsch: https://youtu.be/keUEfMUW5AM

Conferences, Presentations, Expert Committees, Publications

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Conferences und Presentations

- 2018
  - European Conference for Non-Destructive Testing
    Stockholm
- 2017
  - International Forge Master Conference
    Graz
  - 16. Colloquium „Werkstoff- und Bauteilprüfung in der Schweißtechnik“
    Halle (Saale)
  - DGZfP Annual Conference
    Koblenz
  - 43. MPA Seminar
    Stuttgart
  - DGZfP Workshops:
    Dresden
    Franken
    München
    Halle-Leipzig
    Saarbrücken

Member in Expert Committees

- Director
  - ASNT German Section
- Chairman
  - DGZfP UA Digitization
- Member
  - DGZfP FA Ultrasonics
  - DGZfP UA Automated Ultrasonic Testing
  - DGZfP FA Thermography
  - DGZfP FA ZfP 4.0
  - VDA FA ZfP

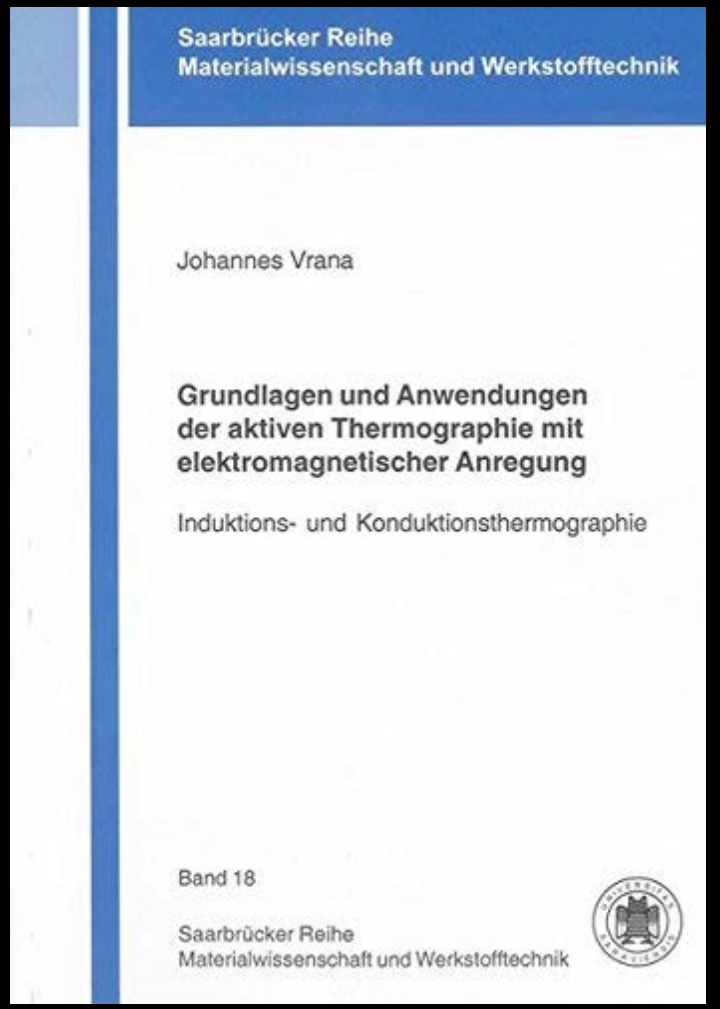
Publications

- 8 Scientific articles
- 4 Books
- 15 Conference articles
- 8 Patents

Selected Publications

Selected Publications

- PhD Thesis: “Grundlagen und Anwendungen der aktiven Thermographie mit elektromagnetischer Anregung - Induktions-und Konduktionsthermographie“ (2008)
- H. Mooshofer, J. Vrana at al: „Amplitudenbasierte Fehlergrößenbewertung mit SAFT: Auf dem Weg von der bildlichen Darstellung zum Messverfahren“ DGZfP Jahrestagung (2017)
- M. Preißel, T. Heckel, J. Vrana: „Ermittlung der Auffindwahrscheinlichkeit von Reflektoren in Abhängigkeit der Rastergröße bei der Ultraschallprüfung großer Schmiedestücke“ ZfP Zeitung 150, 52-57 (2016)
- J. Vrana et al: “Smart Data Analysis of the Results of Automated and Manual Ultrasonic Inspections on the Example of Rotor Forgings” WCNDT (2016)
- H. Mooshofer, J. Vrana: “Optimization of the Inspection Duration for SAFT” WCNDT (2016)
- J. Vrana et al: “Determination of an Optimal Examination Grid for the Automated Ultrasonic Inspection of Heavy Rotor Forgings” ECNDT (2014)
- J. Vrana et al: “Evolution of the Ultrasonic Inspection Requirements of Heavy Rotor Forgings over the Past Decades” Rev. Prog. QNDE 29, 1623-1630 (2010)
- M. Goldammer, J. Vrana et al: “Automated Induction Thermography of Generator Components”, Rev. Prog. QNDE 29, 451-457 (2010).
- J. Vrana et al: “Induction and Conduction Thermography: Optimizing the Electromagnetic Excitation Towards Application” Rev. Prog. QNDE 28, 518-525 (2009)
- J. Vrana et al: “Mechanisms and Models for Crack Detection with Induction Thermography”, Rev. Prog. QNDE 27, 475-842 (2008)
- J. Volz, M. Weber, J. Vrana, et al: “Observation of Entanglement of a Single Photon with a Trapped Atom”, Phys. Rev. Lett. 96, 030404 (2006).
- Master Thesis: “Towards Atom-Photon Entanglement: State Selective Detection of a Single Atom” (2004)



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