

In-process Sensing for Metal AM Parts, Using Eddy Current Arrays

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www.jentekensors.com

NIST
Workshop:
“Empowering
Small and
Medium Size
Enterprises
Through
Effective
Additive
Manufacturing
Data
Management”

- ❑ JENTEK Sensors and JENTEK AM Technology
- ❑ Pain Points for SMEs in the AM market
 - Part qualification approval
 - Access to software from machine vendors
 - Modifying AM machine for hardware integration
 - Price points for embedded solutions vs value
 - Control of Intellectual Property after embedding
 - Data access/control from embedded solutions
 - After market data management
 - Lack of visibility on impact and market value

JENTEK Sensors, a history of delivering solutions

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Slide

Outstanding Paper Award, *ASNT Materials Evaluation Magazine*,
July 2003, Aerospace Health Monitoring



2004 Outstanding Phase III
Transition Award,
awarded by the Navy
Transition Assistance
Program



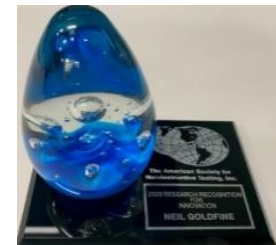
2006 National Tibbetts Award
for outstanding contributions
to the SBIR Program



2007 FAA/Air Transport
Association 2007 "Better Way"
Award
for Engine Component
Inspection Technology



2020
ASNT Innovation Award



Awards

Success Stories

- 2001-present; fighter aircraft engine blade inspection
- 2002-present; C-130 propeller inspection
- 2005-present; fighter aircraft disk slot inspection
- 2007-2011; space shuttle leading edge inspection
- 2009; fighter aircraft blade dovetail inspection
- 2011-present; Rolls Royce AE engine inspection
- 2013-present; SCC crack detection for pipelines
- 2015-present; A380 pump hole inspection
- 2016-present; engine blade fir tree inspection
- 2018-present; additive manufactured part inspection
- 2019-present; conductivity mapping for AL plate
- 2020-present; friction stir weld inspection

Sticky solutions
that produce a
revenue stream
over decades

New transitions
with >10x
revenue growth
opportunities

- Spacecraft weld inspection
- Additive manufacturing in-situ sensing
- Army asset quality and sustainment
- NDT for aircraft
- Off-shore NDT
- NDT for automotive in-process

Targeted solutions, continual revenue

<https://jenteksensors.com/resourcecenter.php>

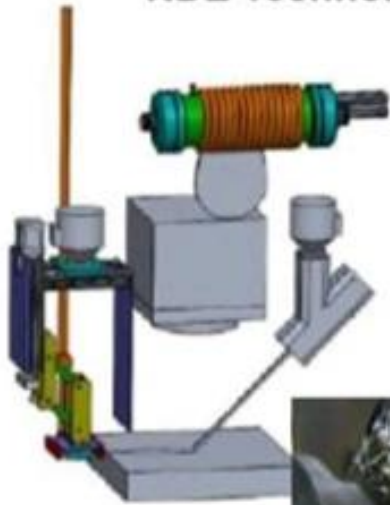
JENTEK Project for Electron Beam Direct Energy Deposition

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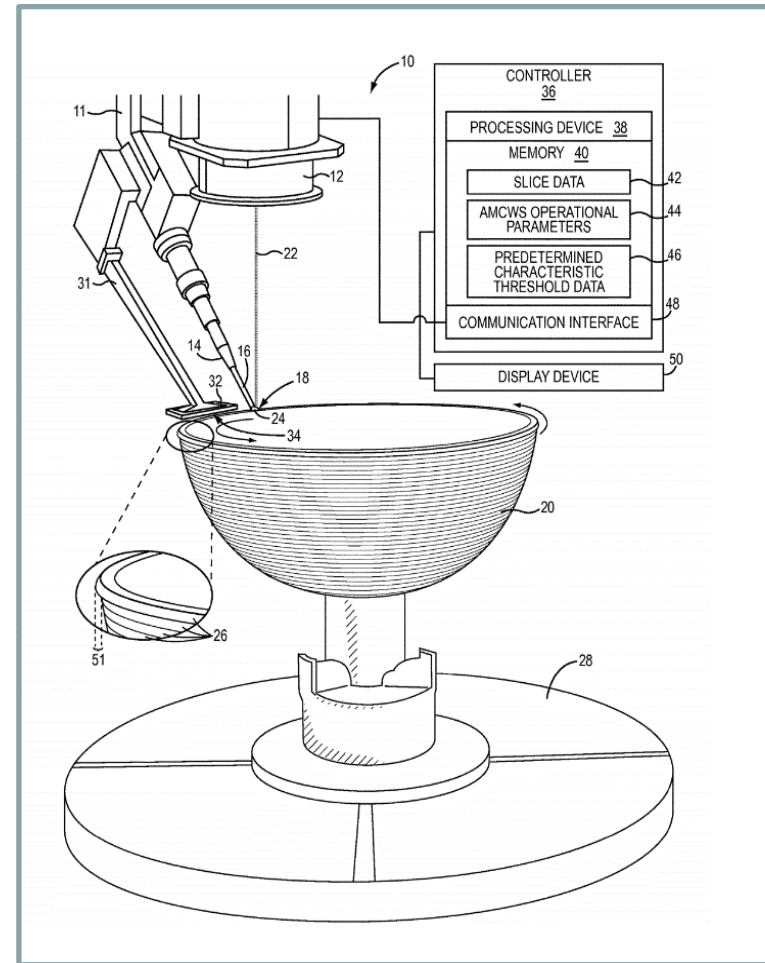
NDE Technologies for EB-DED Ti

**Slide from public
Lockheed Martin
presentation
(left images)**

JENTEK® Sensors

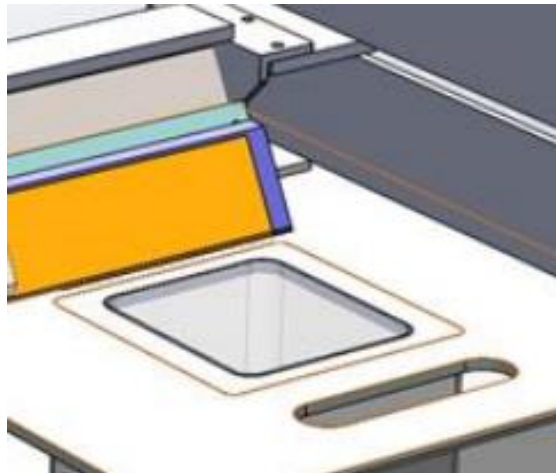
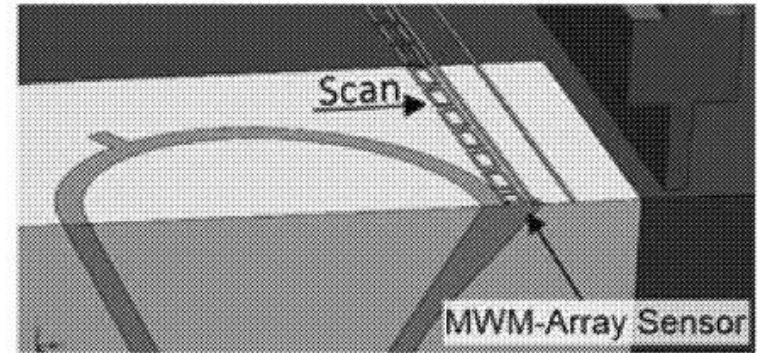
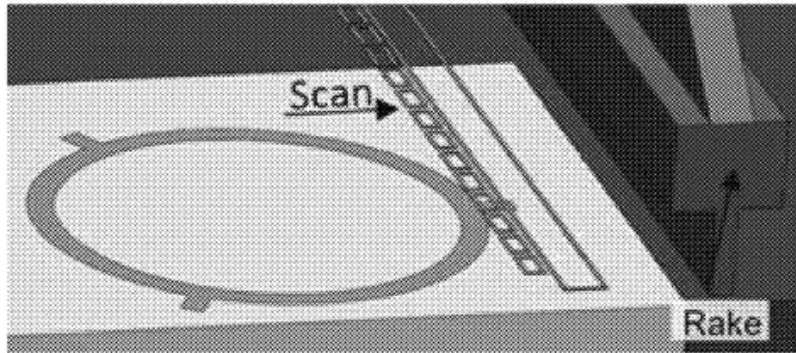


Lockheed Martin & JENTEK Sensors Proprietary



JENTEK Project for Laser Powder Bed Fusion (LPBF)

In-Process Layer-by-Layer sensing for defects, geometry and metallurgy



In NDT “it is not the smallest defect you can detect that matters most, it’s the largest defect you miss” and its location.

Issued Patents: 11,268,931; 11,268,933; 11,543,388

Published Pending Patent Applications: 2018/0264590; 2023/0095662;

(Other patents pending)

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JENTEK has overcome these obstacles by teaming with a large company and a machine manufacturer, and by obtaining several seminal patents.

This appears to be the only way to access this market