DISCOVER IR SUITE

NIT New Infrared Technologies

In-line quality assurance system for brake disc HS-LMD* coating processes

*High Speed Laser Metal Deposition

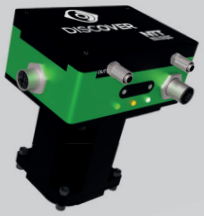
Real time quality assurance of coating processes

Top OEMS relies on DISCOVER IR SUITE

Increase productivity and reduce CO_2 emissions

HIGH SPEED REAL TIME IN-LINE MONITORING SYSTEM

Continuous monitoring and process quality assesment.



SOLUTION FOR BRAKE DISC HS-LMD PROCESS

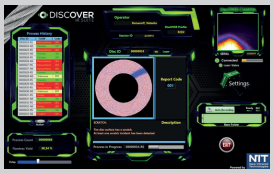
- ✓ Real time quality assessment.
- ✓ Advance software for monitoring and process analysis.
- ✓ Suitable for AI and self-learning strategies.
- ✓ Easy installation and set up.
- ✓ Adapted High Speed Infrared imaging camera.

DISCOVER IR SUITE provides, in process, quality assesment (Ok, NOk) of a brake disc coating process.

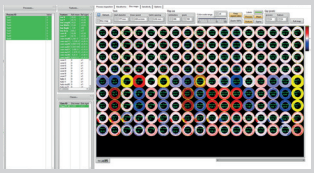
A specially adapted high speed IR images captures, analyses and extracts key information from coating processes in real time.

Mathematical treatment of the extracted information allows to identify and classify most common process deviations and instabilities in real time.

ADVANCED SOFTWARE



Powerful analysis tool AI based.



Detect and classify the most common process anomalies.

- Infrared imaging captured by DISC**OVER** sensor.
- Automatic background and NUC with buffered frames.
- Frame rate 1kfps.
- Logging capabilities.
- Image segmentation.
- Image features –core, halo… @ 1kHz: Visualization on 2D disk map.
- Final score for classification (distance average).

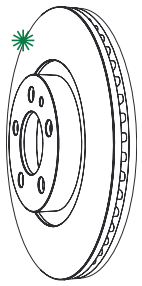
MAIN BENEFITS

ADVANTAGE OF USING DISC**OVER** IR SUITE

A unique system that guarantees quality assurance in HS-LMD brake discs coatings.

Real time classification of process deviations and instabilities:

- Dirty & defect surface identification.
- Powder flow rate.
- Powder line bended.
- Injectors blocked.
- Linear speed variations (feed rate).
- Nozzle misalignment.
- Powder leak. Able to quantify the leak size.
- Powder mass flow rate.
- Tungsten Carbide content.



MAIN SPECIFICATIONS

CE

COMPONENTS	Sensor head with embedded real-time processing electronics and connectors. Imaging lens. Software for system configuration and analysis. Infrared emmiter for initial focus and optical calibration.
PROCESS COMPATIBILITY	High speed LMD (Laser Metal Deposition) process.
OPTICS REQUIREMENTS	Optical path transparent to infrared radiation (above 1.1 um) from the process area to the optical port is required. *
DIMENSIONS / WEIGHT	84 mm x 60 mm x 42.5 mm / 0.5 kg
POWER SUPPLY	5 VDC, 10W
IMAGING LENS	According clients specifications and needs. Several optical configurations available - Manual focus.
MECHANICAL ENCLOSURE	IP67 housing with embedded waterblock for air/watercooling temperature estabilization.
MECHANICAL INTERFACE	C-mount thread with counterthread for tight adjustment.
INFRARED CAMERA	VPD PbSe camera, 64x64 pixels (pixel size: 50 microns). Sensitive in the MWIR (1-5 microns). Fully Digital and snapshot type ROIC.
COMMUNICATION INTERFACE	Gigabit Ethernet (M12 connector)
SOFTWARE	Discover software suite: Including both analysis software and production software.
MINIMUM REQUIREMENTS	PC with processor i5, RAM memory: 8 GB Hard disk available: 1 GB, O.S.: Windows 10 or later (32/64 bits)
OTHER FEATURES	2x digital input, 2x digital output (multiple functionalities) Process data logging.

*The performance of the system may be limited if additional optical components are installed in the optical path.

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NEW INFRARED TECHNOLOGIES, S.L.
Calle Vidrieros, 30, Nave 2
28660 Boadilla del Monte - Madrid, España
info@niteurope.com

What is not measured cannot be controlled, and what is not controlled, cannot be improved.