

# PdM & CONDITION MONITORING

MONITOR. PREVENT. PERFORM.

**dPde palma**  
thermofluid

**ISE**  
BEFORE IT HAPPENS





**ISEE**

BEFORE IT HAPPENS

## **WE ANALYSE THE PRESENT TO IMPROVE THE FUTURE**

OUR EXPERTISE IS BASED ON OVER 20 YEARS OF ON SITE  
ACTIVITY ON INDUSTRIAL PLANTS, TO SUPPORT COMPANIES IN  
RELIABILITY IMPROVEMENT AND PRODUCTION OPTIMIZATION.



## PdM & CONDITION MONITORING

ISE delivers maintenance technologies and methodologies capable of capturing the signs of wear of the machines, detecting the probable failure time and suggesting the planning of the maintenance intervention.

## VIBRATION MEASURES ELECTRICAL

## MEASUREMENTS

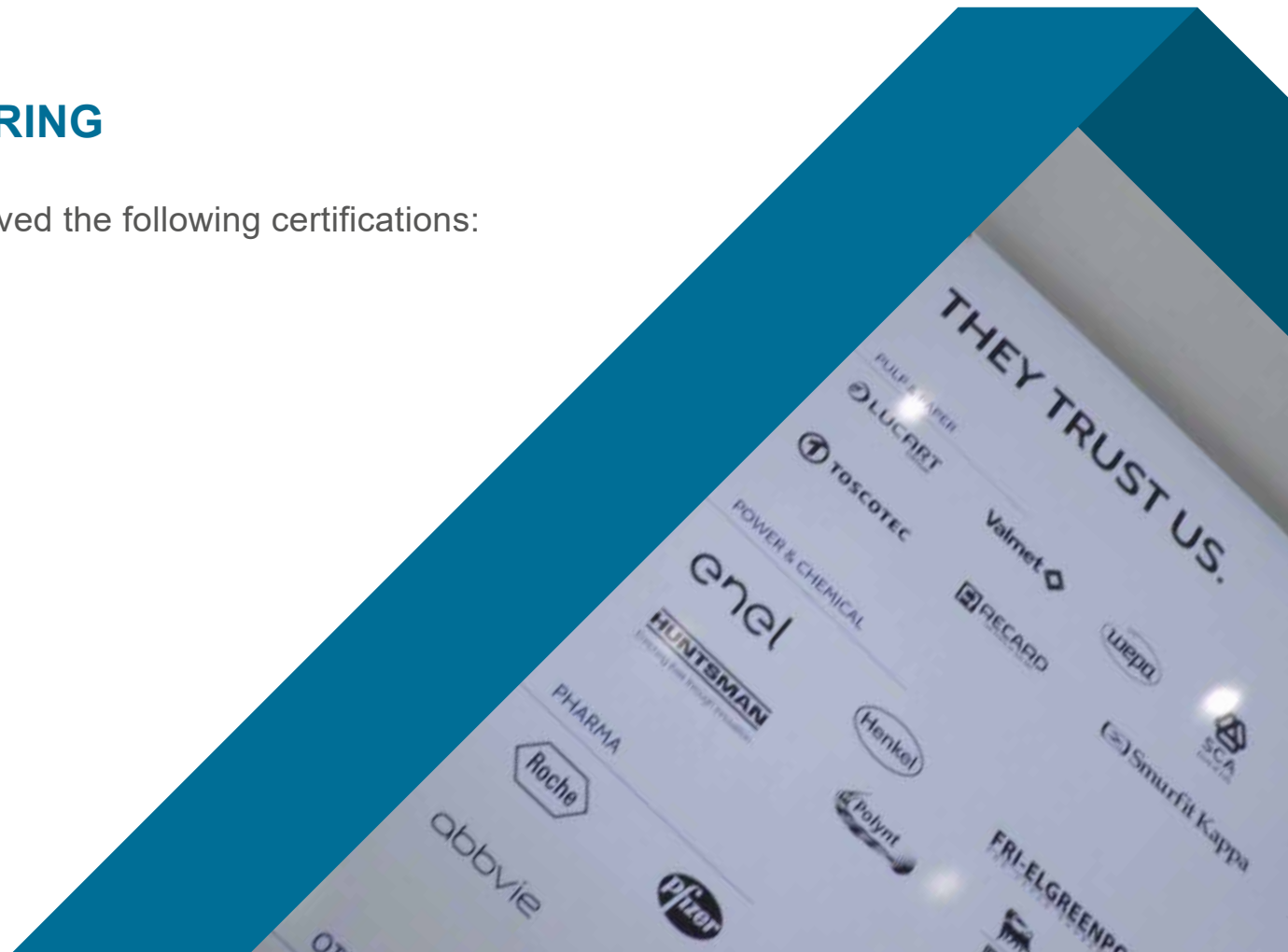
## THERMOGRAPHY

## MACHINERY DIAGNOSIS

## REMOTE CONDITION MONITORING

ISE engineers and technicians have achieved the following certifications:

- ◆ **VIBRATION INSTITUTE CATEGORY II, III**  
FOR VIBRATION MEASUREMENTS
- ◆ **PES-PAV CERTIFICATION**  
TO OPERATE ELECTRICAL EQUIPMENT
- ◆ **PdMA USA CERTIFICATION**  
FOR ELECTRICAL MEASUREMENTS
- ◆ **ITC LEVEL II, ISO 9712 / EN473IT**  
FOR THERMOGRAPHY
- ◆ **SDT LEVEL 2 ASNT**  
FOR ULTRASOUND DETECTION ANALYSIS
- ◆ **NDT LEVEL II VT, UT, MT, PT ISO 9712**  
FOR NON-DESTRUCTIVE TESTING





## VIBRATION MEASURES

Analyzing the vibrations of rotating machines means monitoring their correct functioning so to detect all possible anomalies and thus prevent functional failure and consequent plant shutdown. **In this way it is possible to plan when and how to perform maintenance intervention, with obvious savings in time and costs.**

Thanks to the **Twise®** family products conceived by ISE, we offer data acquisition services, analysis and reporting, with the support of analysts **certified by the Vibration Institute**, an internationally recognized organization.





## ELECTRICAL MEASURES

Static and dynamic electrical measurements performed by ISE technicians on electrical equipment allow to identify plant malfunctions ensuring better production performance.

**There are anomalies that are difficult to detect with normal measurement techniques but thanks to the collaboration with PdMA Corporation and Dewesoft, ISE is able to offer optimal measurement and diagnosis services on electric motors, inverters, generators, transformers and other electrical equipment.**





# THERMOGRAPHY

The overheating of a machine, if not identified, can seriously damage a system, causing the entire system to stop.

The thermographic survey is a fast, reliable and non-invasive system to prevent damage and anomalies process of machines. A thermal imager senses the thermal changes of a component or machine translating them into "warm" or "cold" colors on the screen, and delimits the area affected by thermal imbalance.

ISE technicians, through the use of Flir systems professional thermal imaging cameras, identify:

- ♦ **the anomaly that causes overheating**
- ♦ **the related causes**
- ♦ **the activities to plan for the restoration of the components**





# REMOTE MONITORING AND DIAGNOSTIC SYSTEMS

Compressors, turbines, fans, wind turbines and other critical rotating machines are monitored continuously, in order to prevent major failures and to suggest the most appropriate decisions on the necessary maintenance interventions.

Sensors are applied on these machines; they are connected by means of signal cables, to data acquisition systems, in turn connected with **ISE monitoring and diagnostic center**. In the control room, numerous parameters are monitored remotely: vibrations, angular speeds, electrical quantities, torsional torques, temperatures, oil condition, visual and thermographic images.

**COMPARED AND PROCESSED DATA LEAD TO DIAGNOSIS AND RECOMMENDATIONS, DETERMINING HOW TO ACT.**

**ALL MANAGED REMOTELY AND WITHOUT ANY BURDEN FOR THE CUSTOMER.**







## OTHER SERVICES

Being able to avoid unexpected plant shutdowns generates significant savings,  
with rapid returns on investment.

**ISE supports its customers in guaranteeing reliability by providing monitoring and machinery diagnosis services** using the most appropriate technologies according to specific needs.

SERVICES:

- ultrasound measurements
- video endoscopic inspections
- laser alignments, balancing
- non-destructive testing
- advanced diagnostics





# TRAINING

## AN ADDED VALUE

What defines ISE training courses especially concerning Condition Monitoring is the combination of the experience gained in the field by the technicians with the **theoretical and methodological bases and the best practices of reference.**

The training courses can be held at the ISE offices, or organized **directly at the plants** according to the specific needs of the customer.







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