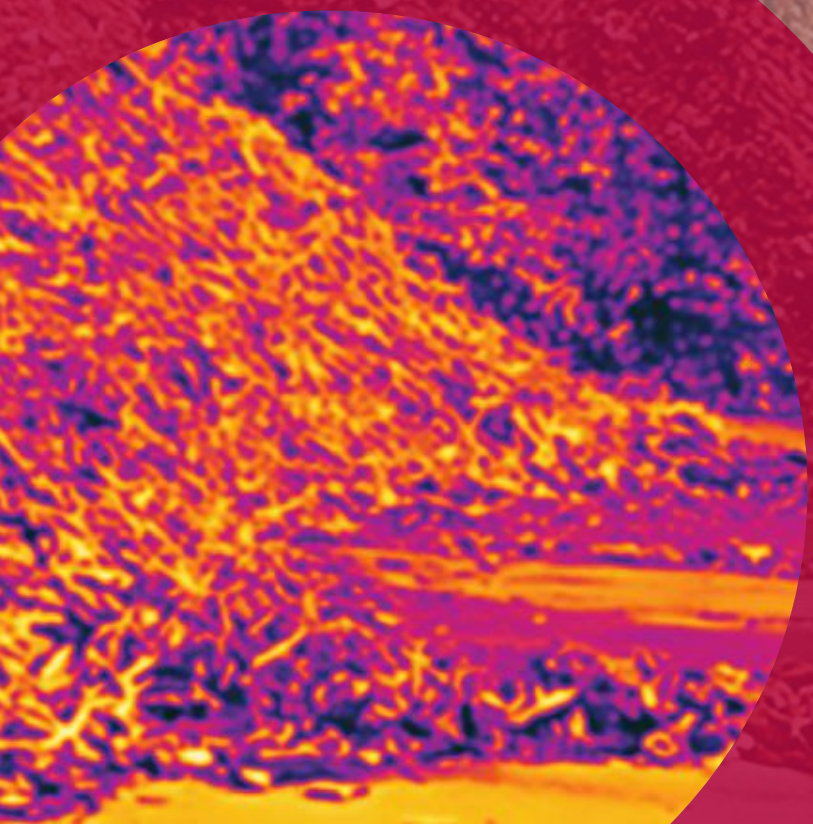
INPROTEC IRT

The Thermal Infrared Solution

PREVENT FIRE BEFORE IT STARTS



INDUSTRIAL THERMOGRAPHY FOR MONITORING AND SAFETY

THE NEW GENEARATION OF FIRE PREVENTION SYSTEMS

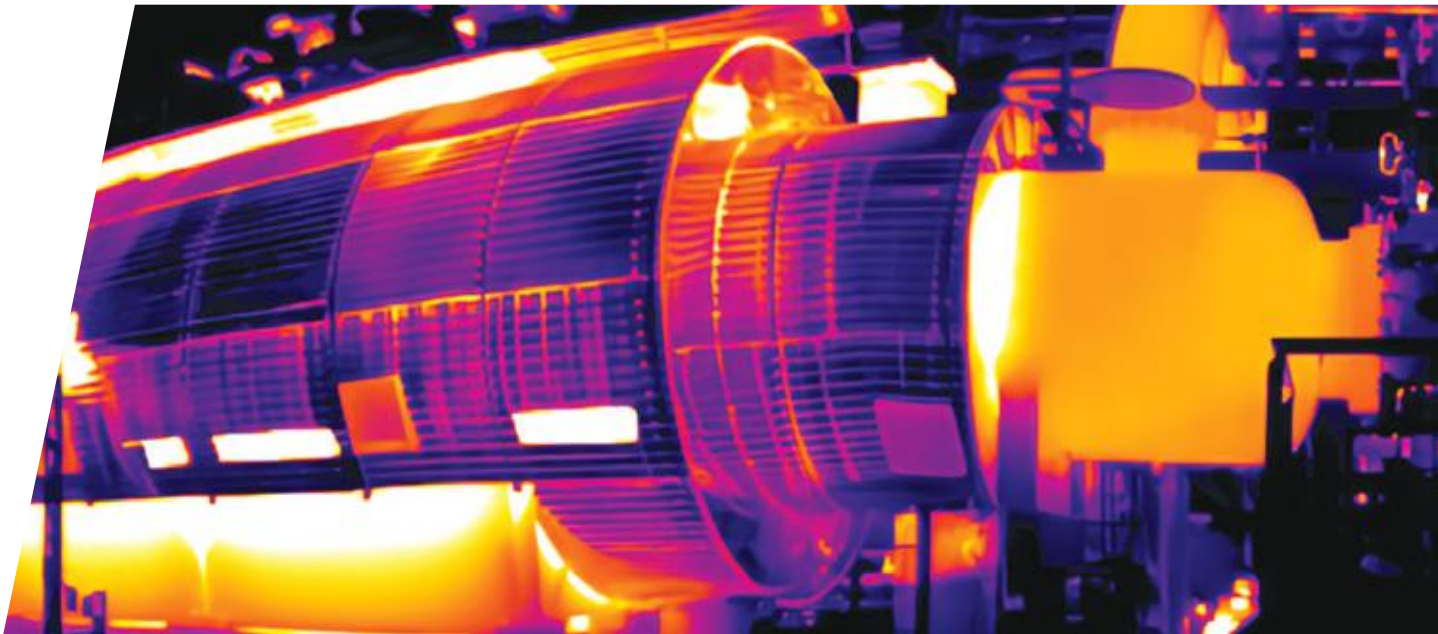
Thermography stands out for its ability to remotely **measure the surface temperature** of objects, machinery and materials, without any physical contact, **ensuring safety, operational continuity and precision** even in difficult or dangerous environments.

In high-risk industrial contexts – such as the storage of combustible materials or high-temperature manufacturing processes – thermography enables the early **detection of fires by identifying thermal anomalies** (hotspots) before they develop into real ignitions.

The use of high-sensitivity thermal imaging cameras allows you to:

- Constantly monitor critical areas
- Detect localized overheating
- Generate automatic alarm systems
- Take prompt action before damage occurs

Thermography is not only an analysis tool, but also a strategic ally for safety, **efficiency and risk prevention in all industrial sector**.



THERMOGRAPHIC INNOVATION FOR SAFE AND CONTROLLED PROCESSES

INPROTEC IRT specialises in **the design and manufacture of advanced thermographic systems for industry**.
Our solutions cover:

- Thermal monitoring of production processes
- Early detection of fires on machinery and equipment plants
- Thermographic control inspection of high-risk storage sites
- Custom systems for special applications

30 YEARS OF INDUSTRIAL THERMOGRAPHY

With over 30 years of experience in the **thermography sector**, our technical and sales team works alongside the customer to offer tailor-made solutions, able of improving quality, increasing productivity, reduce operating costs and **minimize the risks of fire**.

We offer **specialized technical assistance service**, both remotely and on-site, through scheduled maintenance contracts.

ADVANCED SAFETY WITH EFD THERMAL MONITORING

INFRARED TECHNOLOGY AT THE SERVICE OF FIRE PREVENTION

The EFD (Early Fire Detection) system uses **infrared thermal imaging cameras** to constantly monitor the temperature of materials and environments, **detecting hot spots that can anticipate a fire**. Thanks to the ability to measure temperature remotely and without contact, it is possible take prompt action, before the danger is visible or detected by traditional sensors.

It is an ideal solution for high-risk sectors such as:

- Landfills and waste sorting sites
- Paper, plastic, wood, rubber storage facilities
- Lithium batteries production and storage
- Industrial plants and warehouses

The EFD system is available in a **complete cabinet** version with a **Panel PC, PLC, siren, software and electrical components** (thermal cameras of customer's choice), as well as an **office station** with **PC Server for centralized remote control**.

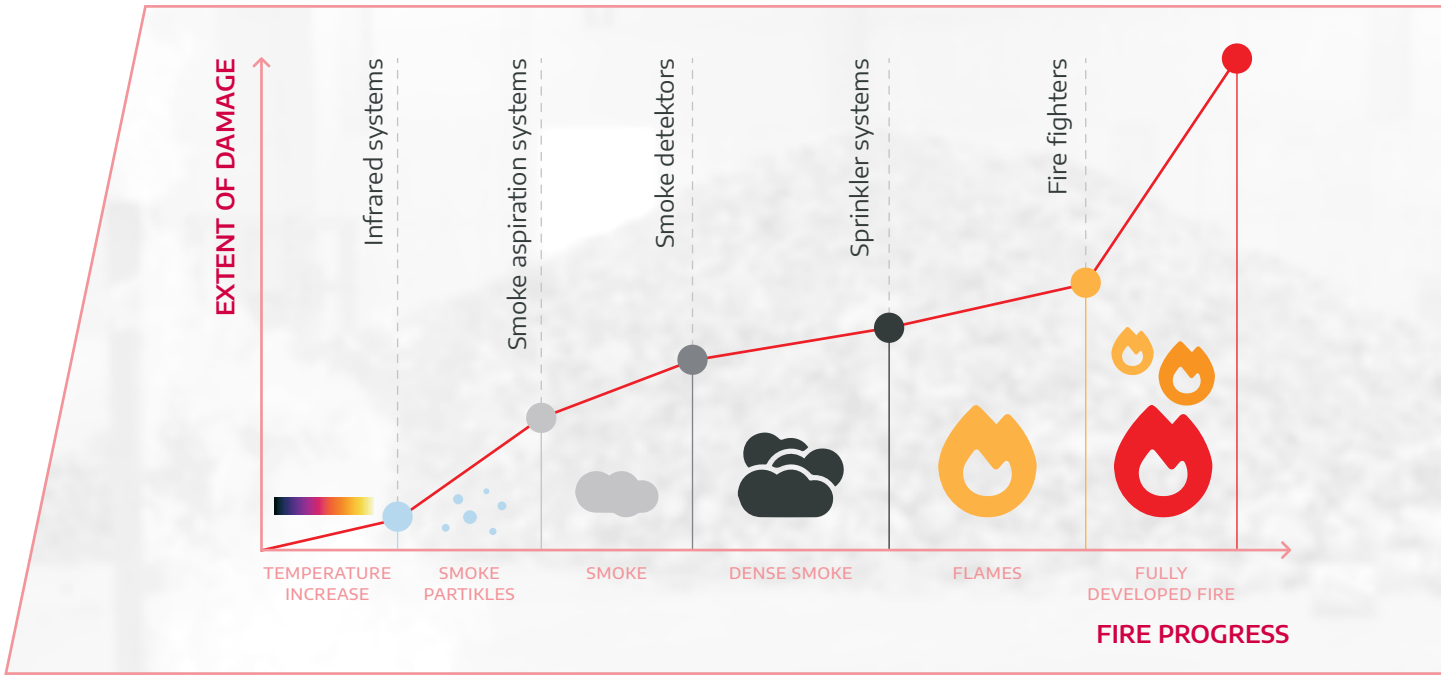
Measurement areas (ROI) can be defined to monitor specific zones, receive automatic alarms and compare data with thermal history.

Fire prevention is not only a matter of personal and environmental safety but also an economic issue.
A system that allows companies to **avoid or reduce fire risks** can save lives, save money, and prevent downtime for machinery and storage facilities.

PROTECT YOUR STAFF AND THE ENVIRONMENT BY DETECTING THE FIRST SIGNS OF FIRE

The **EFD thermographic system** is compatible with a range of brands of thermal imaging cameras, offering flexible solutions based on the application.
From **low-resolution sensors** for installation inside machinery, to **320x240 pixel models** for medium-sized environments, up to **high-definition devices** (640x480 pixels) ideal for warehouses and landfills.

Thermal imaging cameras can have **manual focus, or motorized/autofocus for remote control**. **Interchangeable lenses** are available, ranging from wide angle to telephoto These can be adapted to suit different distances and areas to be monitored.



The **MR-EFD software**, developed internally by our company, is simple to use, complete with all **detection functions**.
It detects early fires and is constantly updated to respond to operational needs.
MR-EFD integrates perfectly with existing systems thanks to support of industry standard protocols such as:

› MODBUS | PROFINET | OPC UA

MR-EFD

APPLICATION EXAMPLES EFD SYSTEMS

PRODUCTION AND STORAGE OF LITHIUM-ION BATTERIES

During transport and storage, electric vehicle batteries can retain a residual charge that can cause fires and serious infrastructure damage.
Thermal imaging cameras allow constant temperature monitoring and the early detection of thermal anomalies, allowing timely intervention to identify overheating and fires early on.

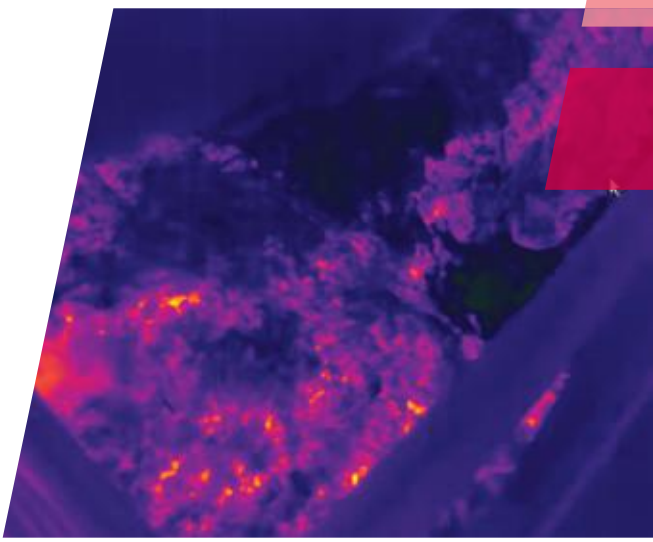
INDUSTRIAL PRODUCTION AND QUALITY CONTROL

Thermal imaging cameras facilitate predictive maintenance. They enable production managers to identify process anomalies and detect any defects in products and packaging, thereby improving efficiency and safety. Furthermore, they also identify heat buildup in hazardous materials or electrical components before fires break out.

WAREHOUSES AND LOGISTICS

Although equipped with fire prevention systems, warehouses are vulnerable to fire damage. Thermal imaging cameras detect hot spots in advance, even in the dark and through the smoke, ensuring 24-hour monitoring In an emergency, they help rescuers locate fires and identify people who are trapped.

APPLICATION EXAMPLES EFD SYSTEMS



WASTE, RECYCLING AND ENERGY FROM RENEWABLE SOURCES

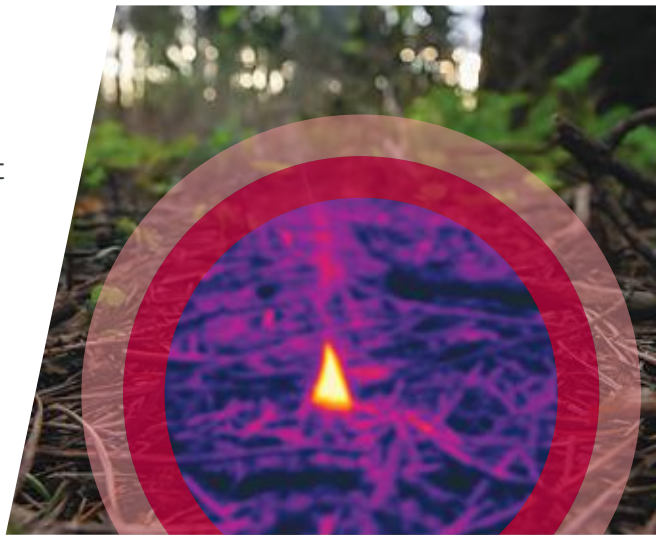
Waste disposal and recycling plants are subject to fires caused by spontaneous chemical reactions, or hot particles.
Thermal imaging cameras can detect heat sources early on, this protects people, structures and business continuity.

BIOMASS AND ORGANIC HEAPS

Biomass is subject to self-heating during decomposition. Thermal monitoring allows hot spots to be detected before flames or smoke develop, providing valuable time to implement preventive measures and avoid fires.

FOREST FIRES

Thermography is a crucial tool in fighting forest fires: it allows you to “see” through smoke and detect hotspots invisible to the human eye or traditional cameras.
It facilitates quick and targeted decisions to direct rescue efforts, extinguish the hot spots before they become uncontrollable and intervene on dormant hot spots after the fire has been extinguished.



INSTRUMENTATION AND SYSTEMS OFFERED BY INPROTEC IRT

IMPROVE CONTROL OF YOUR PROCESSES WITH ADVANCED TEMPERATURE DETECTION SYSTEMS

THERMOGRAPHY AND THERMAL IMAGING

- Portable thermal imaging cameras for industrial and civil applications
- Fixed and laboratory thermal imaging cameras for research and development (R&D)
- Portable and fixed OGI (Optical Gas Imaging) thermal imaging cameras, for gas leak detection
- Active thermography systems for detecting defects on composite, metallic and non-metallic materials

MONITORING IN EXTREME ENVIRONMENTS

- Cameras and thermal imaging cameras for high-temperature environments, for viewing and measuring the internal temperature of furnace, boilers, and waste-to-energy plants
- Linear infrared scanners for thermal monitoring of rotary kilns and production processes

HIKMICRO
MIRION
FLIR
Thermoteknix

ACOUSTIC DETECTION OF ELECTRICAL DISCHARGES

- Portable and fixed acoustic cameras for leak detection on compressed air and gas systems, and for detecting partial discharges (Corona effect) on MV/HV electrical systems
- UV/VIS bi-spectral cameras for detecting the Corona effect on HV/MV power lines

ADVANCED OPTICAL TECHNIQUES

- Shearography Systems use optical technology based on the analysis of surface deformations following thermal stresses. Widely used in Aerospace, Automotive and materials research sectors

ACTIVE THERMOGRAPHY SYSTEMS

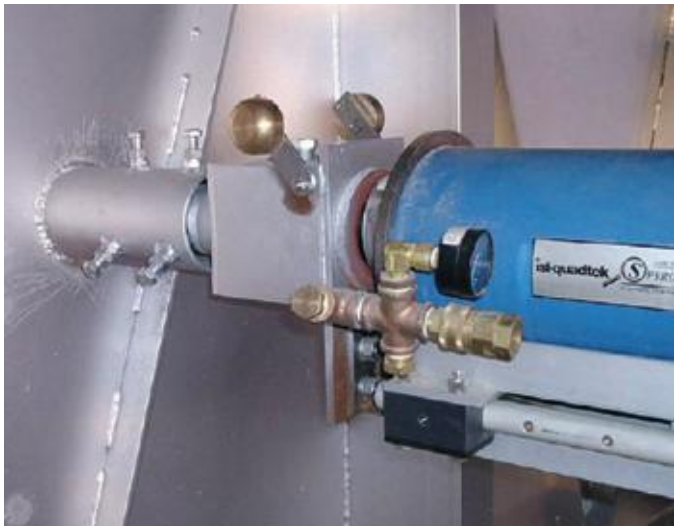
- Edevis: quality control and material analysis systems that combine thermal excitation and infrared imaging for accurate, non-destructive analysis. Suitable for Aerospace, Automotive and scientific research sectors

edevis®

OPTRION

FLIR

UVIRCO TECHNOLOGIES



SPECIALIZED THERMOGRAPHIC SYSTEMS

MONITORING CONTINUOUS AND CONTACTLESS SLAG

SLAG VISION

The **SLAG VISION** system is a technologically advanced solution designed for **monitoring and controlling the presence of slag** during the continuous casting process in steelworks.

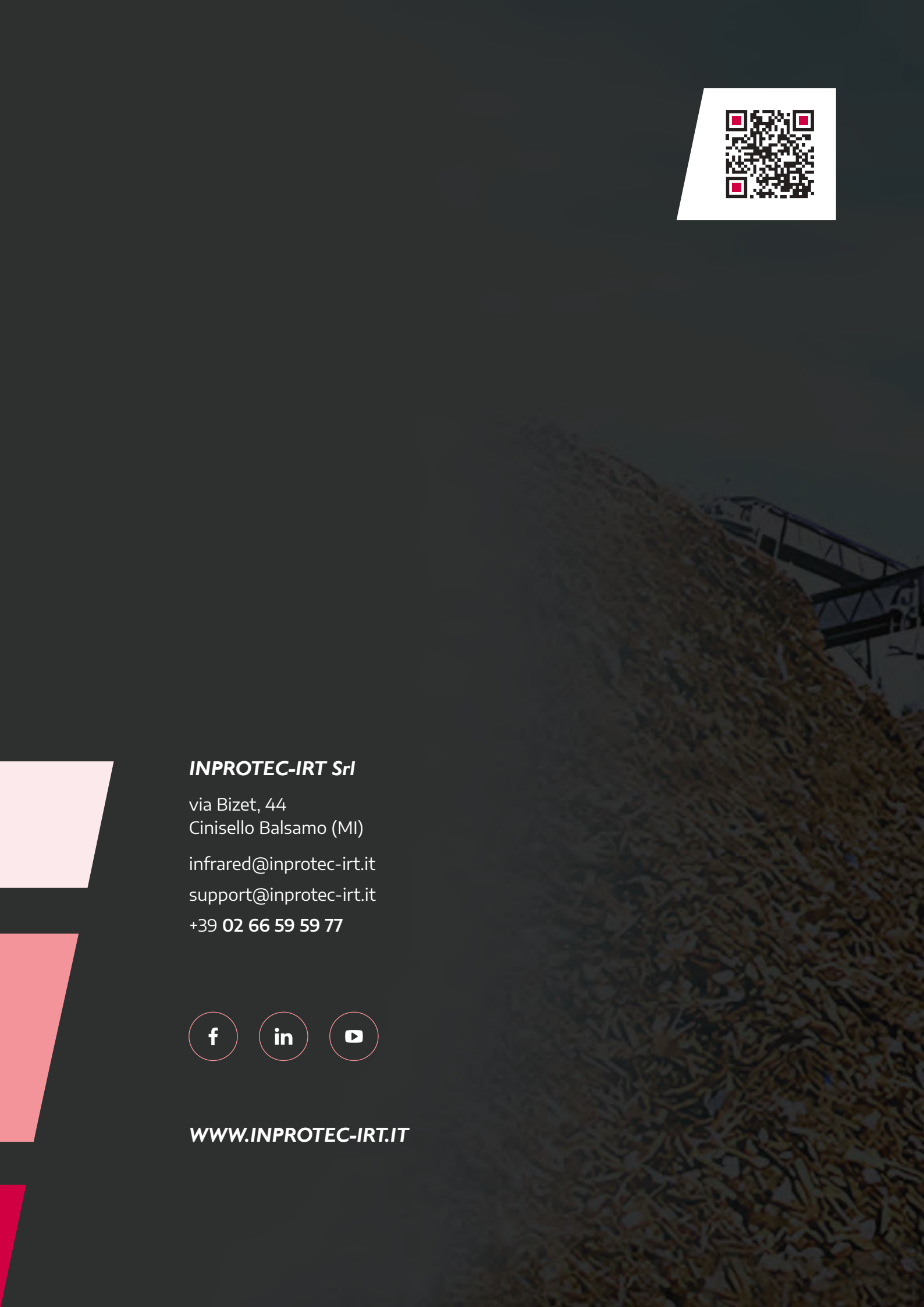
Based on high-precision thermographic technology, SLAG VISION allows for **real-time detection the presence of slag along with liquid steel**, ensuring significant improvement in the quality of the final product and the efficiency of the production process.

ADVANCED THERMAL CONTROL FOR DIE CASTING

DTC (DIE THERMAL CONTROL)

The **DTC – Die Thermal Control** system is an advanced solution for **thermal monitoring of moulds** used in the die casting, gravity and low-pressure casting process.
Designed to ensure **precise and continuous control of the surface temperature of the moulds**, DTC allows you to optimize the production cycle, improve the quality of the castings and reduce casting defects.


LET'S SEE
THE INVISIBLE
TO PREVENT
THE RISKS
INPROTEC-IRT.IT



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