JNARDDC helps Indian aluminum industry save energy and optimize production process with thermal cameras.

Thermal imaging cameras are a very welcome technology in the aluminum production industry. In India, the established JNARDDC institute is using thermal imagers to help aluminum production companies across the country save energy and find faults in a very early stage.

Aluminum is the second most abundant metallic element in the earth's crust after silicon and has been produced in commercial quantities since 1886. It is the world's second most used metal. Aluminum's many properties and qualities explain the magic surrounding this metal and the reason why its popularity continues to grow among new product designers who are constantly adding to its already wide range of applications.

Monitoring aluminum production

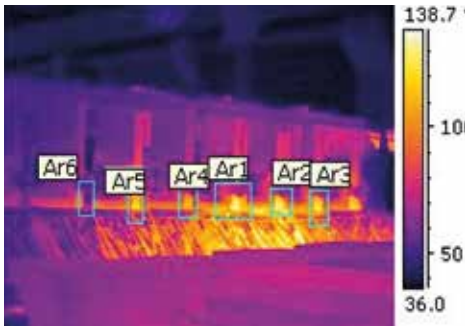
Aluminum production is an energy intensive process and saving energy at each step of the production process is the primary aim of process engineers and designers. Infrared thermography has played an important role in predictive maintenance of these processes in terms of time and money. The predictive maintenance by means of thermal imaging has also helped to perform timely interventions of fault detection and to schedule equipment maintenance.

Monitoring a production process can of course be performed best when processes are running. And it is with this so-called 'online monitoring' that thermal imaging can really show its value. Slight temperature variations across a surface will indicate failing components, such as degrading electrical contacts. But thermography can also successfully be used to inspect furnace ducts, bus isolator jumpers, casings, heating chambers or tanks.

Early fault detection

Infrared thermography has proven to be an

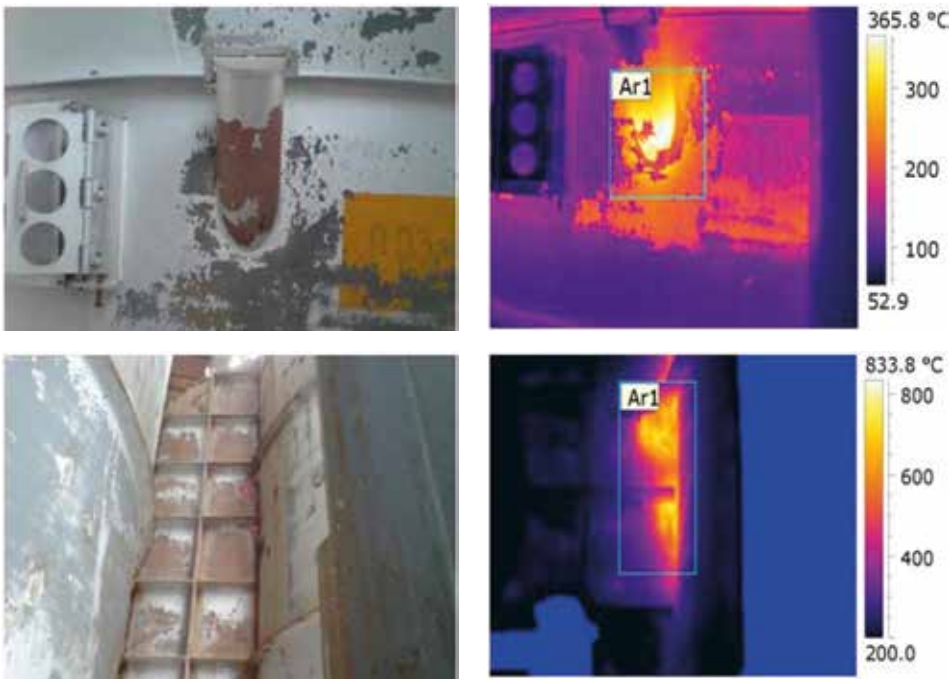
The advanced P660 thermal imaging camera



For JNARDDC, the P660 camera is an ideal solution for cost-effective and efficient predictive maintenance.

effective and beneficial tool to the industry, because it allows production managers to schedule their maintenance routines well before anything critical happens. This saves valuable time and significantly reduces the production downtime. Predictive maintenance schedules help the industry to arrange tools and spares for repair in time. Whether it is switch yard joints, current transformers, insulation of turbines, pumps, motors, hot patches in kiln, furnaces etc., all of the them can be surveyed with thermal cameras for early detections of faults.

By means of thermal cameras and other heat measuring devices like heat flux meters, it is also possible to discover scaling, the unwanted deposits in pipelines, storage and processing units. With thermal cameras you can estimate the thickness of scales and take corrective action when needed.



JNARDDC is now assisting with the design of predictive programs for a breakdown-free plant environment with the help of plant people and their management

Indian center of excellence

The Indian Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC) has been using thermal imaging cameras for years. The institute is located in Nagpur, India, was set up in 1989 and is fully functional since 1996. JNARDDC is an established center of excellence in the Indian aluminum industry. Next to the conduct of research, the center also offers a variety of R&D, testing and training services to the aluminum industry.

In order to better support its aluminum production customers with high-quality services, JNARDDC decided to purchase FLIR thermal cameras in 2002. The institute was supported by FLIR's local distributor PCI Limited, situated in Mumbai, who recommended JNARDDC to use the FLIR P660 professional thermal imaging camera for predictive maintenance purposes.

Inspection frequency

In India, aluminum production companies usually carry out thermography inspections only when the need arises. Others will perform inspections on a yearly or half-yearly basis. The advent of thermal imaging in predictive maintenance programs has resulted in willingness to perform these maintenance routines more frequently, because inspection with thermal cameras no longer requires shutting down production.

The FLIR P660 thermal camera is now frequently used by the team of Mr. Anupam Agnihotri, Head and Scientist at JNARDDC, and consisting of Mr S K Thokal (Electrical Engineer) and Mr N Warhadpande (Electronics Engineer).. Although the institute is enthusiastic about the use of FLIR's technology, customers were a little hesitant at first.

"The operations people were little hesitant at the initial period of inspection, because they conceived infrared to be some kind of X-ray, which would allow them to see inside the equipment," comments Mr. Agnihotri. "Others thought of infrared as being emitted by the camera and thought that it might harm their equipment."

Conceptions like these are indicative and typical for the low awareness of thermal imaging technology. Fortunately, it was an easy task for FLIR Systems and its Indian distributor PCI Limited to explain the many benefits and background of thermal imaging. After a short training program, JNARDDC customers were convinced and understood the importance of online condition monitoring with thermal imaging.

"Now operations managers demand to cover the problematic area more frequently than other areas," comments Mr. Agnihotri. "JNARDDC is now assisting with the design of predictive programs for a breakdown-free plant environment with the help of plant people and their management."

High-performance P660 camera

The FLIR P660 camera is the highest performing infrared inspection system available. With its state of the art technology, including 640x480 detector resolution and unique ergonomic design, it is the natural choice for professionals that want the most efficient instrument producing professional results.

The FLIR P660 is an affordable, easy-to-operate and high-performance infrared camera that delivers accurate temperature measurements at productive and safe distances. This makes the P660 camera an ideal solution for cost-effective and efficient predictive maintenance programs.

The P660 includes an integrated 3.2 megapixel camera to aid in reporting. Infrared and visual images taken with the P660 can be stored in standard JPEG formats. The P660 visual camera includes matching Field Of View lenses, so IR and visual images are shown at similar long distances using the same Field Of View.

For more information about thermal imaging cameras or about this application, please contact:

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