

PAT APPLICATIONS

About (DIR)

DIR Technologies utilizes sophisticated **infra-red detectors** and **thermal imaging** technology combined with **high throughput imaging & analysis** software, to provide innovative solutions for the **quality control and process monitoring** of pharmaceutical manufacturing and packaging processes



Advantages of DIR's technology

- Nondestructive, noninterfering
- In-line, Real-Time, 100% testing
- Very small foot-print, adaptable to any existing production line
- Can be customized to a wide variety of packaging processes
- No slowdown of production

Contact us for additional Information

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PAT

Process Analytical Technology



PAT APPLICATIONS

Dynamic Infra-Red (DIR) Technologies Develops and manufactures thermography based comprehensive Solutions for pharmaceutical authentication and analysis

The FDA introduced the Process Analytical Technology (PAT) initiative in 2010, in an effort to facilitate the introduction of new manufacturing technologies in the pharmaceutical industry, to achieve more efficient processes.

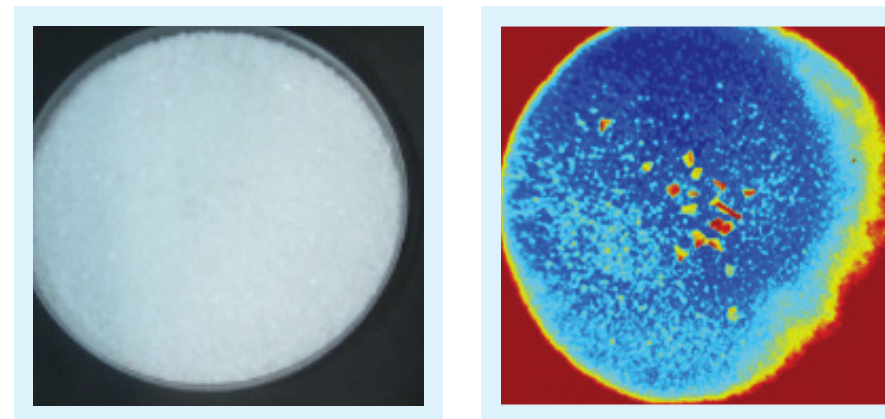
Process Analytical Technologies are systems that enhance process understanding and help identify and control critical points in a process. These include appropriate measurement devices, that can be placed on-line, statistical and information technology tools, and a scientific systems approach for data analysis, to control processes to ensure production of in-process materials and final products of desired quality.

DIR Technologies techniques, based on Dynamic Thermography, have proven to be effective for monitoring a variety of pharmaceutical manufacturing processes

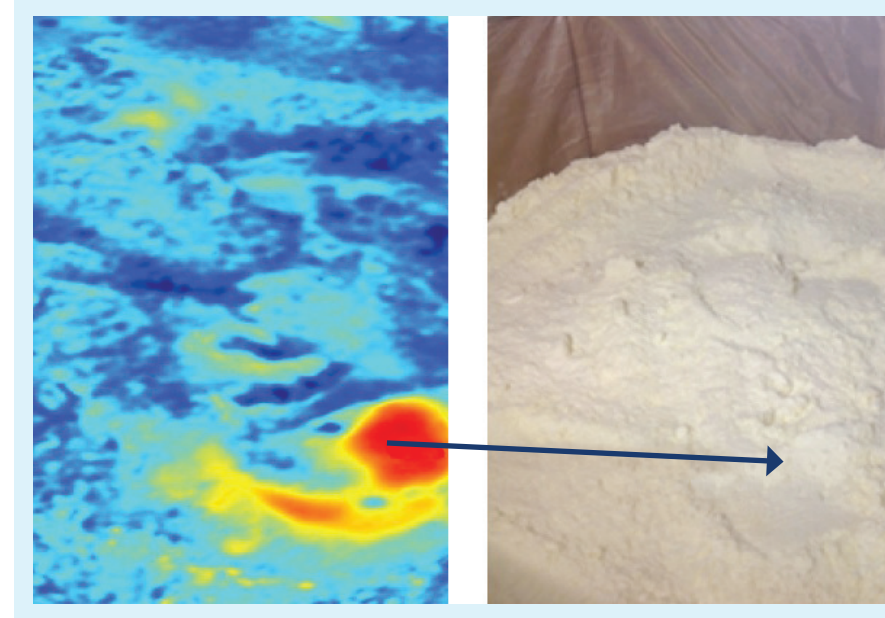


Examples of PAT include

- Hardness monitoring
- Moisture distribution mapping
- Powder drying process monitoring and end point determination
- Capsule content examination
- Particle size monitoring
- Detection of foreign objects in powders



Glass particles in powder are clearly identified by DIR Technologies propriety techniques.



2D Moisture monitoring (end-point determination) in powders