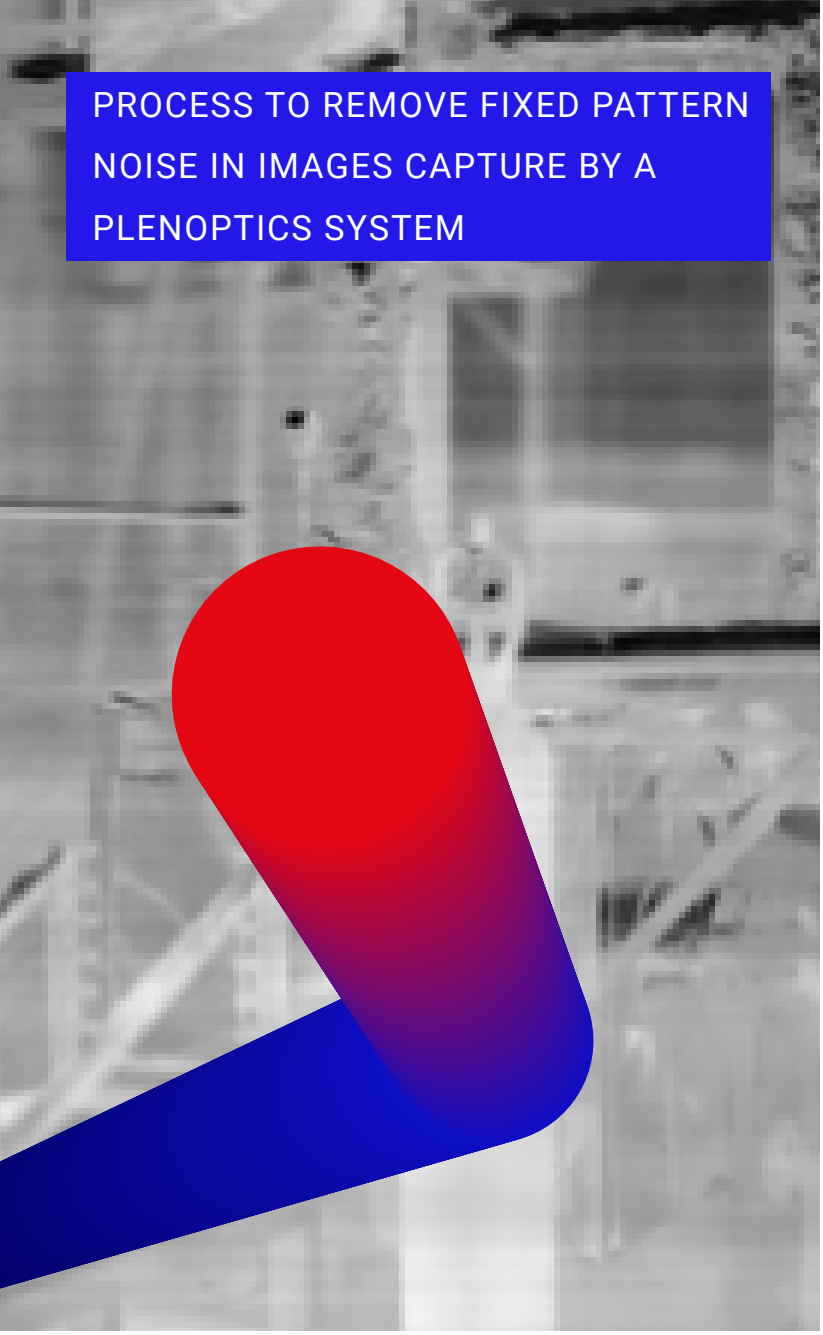
TECHNOLOGY

PROCESS TO REMOVE FIXED PATTERN NOISE IN IMAGES CAPTURE BY A PLENOPTICS SYSTEM

APTA industry

PROCESS TO REMOVE FIXED PATTERN NOISE IN IMAGES CAPTURE BY A PLENOPTICS SYSTEM



The technology is a process that permits the removal of fixed-pattern noise (FPN), a noise especially high for low-energy photons imaging systems.

This solution comes out naturally from a set of images captured by a plenoptics system. The FPN is filtered out by a digital refocusing technique.

MARKET

The infrared, and others low energy photons camera market will grow (CAGR 7%) and the global industry is projected to generate 3.5 million units by 2026, due to the increasing deployment of cameras for all types of end use, from surveillance, security, and analytical medicine.

This type of cameras improves the detection, identification, and classification of objects, being widely used for military, medical, commercial, and industrial purposes, with a chain of equipment suppliers, technical support, and image processing.

ADVANTAGES

• Works with low energy photons images transduced with any kind of focal plane array technology.
• Does not require knowledge of the physical parameters of the transducer or the presence of offline blackbody calibration sources.
• Results comparable with high precision radiometric applications, but more affordable.

APPLICATION

• Digital image enhancement, low energy photon imaging solution, 3D imaging.
• Applications in safety, health, military, and high technology.

DEVELOPMENT STAGE

Process validated with several different sensors and configurations, with a consistent result. In all cases, it is obtained high noise cancellation. The level of noise reduction, quantified by the structural similarity (SSIM) index, increases up to 0.86.

INDUSTRIAL PROPERTY

There are patent applications in multiple countries.