New approach to thermal drift correction and gain determination in microbolometer thermal cameras

by R. Olbrycht*, B. Wiecek*

*Electronic Circuits and Thermography Division, Technical University of Lodz, Institute of Electronics, Poland, robert.olbrycht@p.lodz.pl, wiecek@p.lodz.pl

Abstract

The authors proposed a novel approach to non-uniformity correction (NUC) of microbolometer focal plane arrays in microbolometer thermal cameras. This approach includes thermal drift correction without interrupting the thermal observation. For this purpose a translucent shutter is used instead of an opaque one. The authors provide detailed description of the proposed thermal drift correction approach. Another proposed technique enables verification if gain coefficients of microbolometers remain stable – this requires an IR emitter to be built into the camera. In this paper the latest advances on the proposed NUC approach are presented.

This paper was published in the QIRT Journal 12.2