

บทที่ 6

สรุปผลผลิตงานวิจัย

6.1 บทความวิจัย Thermal Image Resolution on Angular Emissivity Measurements using Infrared Thermography

Nunak, T., Rakrueangdet, K., Nunak, N. & Suesut, T., “Thermal image resolution on angular emissivity measurements using infrared thermography”, In Proceedings of the International MultiConference of Engineers and Computer Scientists 2015 (pp. 323-327). Hong Kong, 18-20 March 2015

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Lecture Notes in Engineering and Computer Science
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Thermal image resolution on angular emissivity measurements using infrared thermography (Conference Paper)

Nunak, T. ✉, Rakrueangdet, K. ✉, Nunak, N. ✉, Suesut, T. ✉, 

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Abstract View references (9)

This paper reports the effect of viewing angle and thermal image resolution (IFOV and FOV) of Thermal Imager (TI) on the emissivity, with a view to providing a potential temperature monitoring of equipment in the electrical power distribution system which the reliability of system is the most important concern. The results show that the emissivity, which is the most important parameter to obtain the accurate temperature, is approximately constant at the viewing angle less than 45°. In case of the changing of the object to detector distance, this will not affect to the temperature measurement if MFOV at the object level is smaller than the targeted object. This can be concluded that TI is an effective tool to measure the temperature and monitor the failure of electrical equipment installed in the position at far away from the operator.

Author keywords

Electrical equipment Emissivity measurements Thermal image resolution Thermal imager Viewing angle

6.2 บทความวิจัย Detection of Foreign Bodies in Roasted Coffee by using Active Thermography

Ngoensod, A., Nunak, N. & Suesut, T., “Detection of Foreign Bodies in Roasted Coffee by using Active Thermography”, In Proceedings of the International MultiConference of Engineers and Computer Scientists 2017. Hong Kong, 15-17 March 2017

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Detection of Foreign Bodies in Roasted Coffee by using Active Thermography (Conference Paper)

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Abstract ▾ View references (15)

This paper presents the detection of foreign bodies in roasted coffee by using active thermography with real-time thermal image processing. Foreign bodies, including stone, wood, etc., are found in roasted coffee beans contaminated during drying process and transportation. The principle of radiation from objects with different emissivity and heat capacity is applied. The heat radiation from the roasted coffee and the foreign body are different; therefore, the thermal image can be used to identify the foreign objects. The active thermography system consists of a thermal image camera and computer image processing, heat source and conveyor system controlled by programmable logic controller. The testing and experimental results of the proposed system show that the foreign bodies in roasted coffee beans can be found in all batches, however, the number counting of foreign objects are inaccurate.