

NEAR INFRARED (NIR) IMAGING FOR NDE

G. G. Diamond

*D. A. Hutchins, and P. Palav, University of Warwick, School of Engineering, Coventry, W. Mids, CV4 7AL
United Kingdom*

ABSTRACT

A novel application of near infrared (NIR) signals is presented, which can be used to provide images of many different materials and objects. It is effectively a very low cost non-ionising alternative to many applications currently being investigated using electromagnetic waves at other frequencies, such as THz and X-ray imaging. This alternative technique can be realised by very simple and inexpensive electronics and is inherently far more portable and easy to use. Transmission imaging results from this technique are presented from examples industrial quality control, food inspection and various security applications, and the results compared to existing techniques. In addition, this technique can be used in through-transmission mode on biological and medical samples, and images are presented that differentiate between not only flesh and bone, but also various types of soft tissue.