

A Practical Technique of Colour Image Analysis: Applications in Experimental Research

P K H Chow, **M Med (Surg), FRCS (Edin)*, T H Ng, ***DMT*, M Chew, ****BSc (Hon)*, I C Song, ****DMT*,
H C I Kee, ****BSc (Hon)*, P O P Mack, *****FAMS, FRCS (Edin), PhD*

Abstract

Commercially available colour image analysers are relatively expensive. We describe a cheaper alternative developed by the Department of Experimental Surgery, Singapore General Hospital using an assembly of optical and computer equipment commonly available in the research laboratory.

This manual colour imaging system is comparable to the commercial model in terms of functional capabilities and accuracy, except that it takes a longer time to process and analyse images and is unable to measure colour density. However, it is capable of not only analysing microscopic images of stained histological tissue sections but also X-ray images and images of large pathological specimens. In the case of commercial models, different systems have to be used to analyse images from different types of specimens.

This system was developed in 1987 and has since been used successfully in a number of experimental studies. It has been applied to the measurement of parameters defining eye anatomical configuration, delineating the extent of tissue necrosis and fibrosis after therapeutic treatment and surgery, the development of new bone formation in fracture healing and to quantitative studies in liver regeneration. Due to its accuracy, low cost and versatility, this system should be within the means of even the most modest research laboratory.

Ann Acad Med Singapore 1999; 28:155-8

Key words: Autocad Release 12, Colour image analyser, Colour imaging system