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An Automated Pollen Recognition System

A Thesis submitted to
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Master of Engineering.

By
Gary Allen

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Institute of Information Sciences and Technology

Massey University
Abstract

A system was developed with the aim of demonstrating that the tedious tasks of classifying and counting pollen on slides could be performed automatically to a standard comparable with that of human experts. Automation of pollen classification and counting will advance the science and range of applications of palynology.

The system developed is a completely functioning prototype. After initial set up and training it is automatic in operation.

System tests have demonstrated that the concept is viable and that the prototype developed is at a stage that it is of practical use to palynologists. There are opportunities for improvements and added functionality. Now that the system is developed and characterised, it provides a benchmark for gauging the efficacy of future improvements and adaptations.

The system is presently adaptable to many different classification problems within palynology and would be adaptable for other automated microscopic classification or imaging tasks.
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