

Prizes awarded in biomedical engineering researches



Computer Aided Diagnosis of Schistosomiasis

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This research has been chosen for the participation in the 14th Student's Creative Forum hosted by Arabic Council for Training Students of Arabic Universities (ACTSAU). The forum was held in Faculty of Sciences, University of Alexandria, Egypt during 2nd to 4th October 2011. The student research has been awarded the first place among all Arab countries participated in the forum. Also the student was honored certificates and appreciation prizes by the ACTSAU for his sincere efforts and precious work done on the research.

Research Abstract

Schistosomiasis is a parasitic infection affecting more than 200 million persons in the developing countries. The parasite multiplication and transmission are very fast and constitute a heavy burden to the public health and medical services. The parasites characterized by eggs and they have different types differ in their shapes. Conventional detection techniques consume a considerable time and they are costly. The human factors affect the accuracy of the results particularly in the mass screening campaigns. This project aims to detect the isolated schistosoma egg by developing an algorithm applying image processing techniques. The designed algorithm is based on invariant moments calculation. The calculated invariant moments are compared with reference invariant moments using the cross correlation coefficient, as a result the algorithm decides whether an egg is detected or not according to the cross correlation coefficient. This algorithm is implemented utilizing MATLAB software. A Graphical User Interface (GUI) is designed for the implemented algorithm. Ultimately, the designed software is capable of automatic detection of schistosoma eggs.