Abstract

The main aim of the present study is to develop an automatic tool to identify and classify the growth stage of the microalgae cell based on morphological growth pattern and also the division time of the individual cell of microalgae population. The proposed strategy is to capture digital images of the microalgae cell growing on culture media and to examine the change in dimensions of each cell throughout the life cycle. To identify geometrical features that are used in estimating the microalgae cell properties, which are helpful for time determination during cell division. The Segmentation method used here is Active Contour and classification is done using fuzzy inference system and decision trees. The experimental results are compared with manual results obtained by phycologist and demonstrate the efficiency of the system.

References


Index Terms

Computer Science  Fuzzy Systems

Keywords

Cyanobacteria, algae, growth phases, cell segmentation, fuzzy inference system