Process Biotechnology Implications for Chemical Engineering at The University of the West Indies

W.A. Mellowes

Abstract

The International Bioindustry Forum has stated that Biotechnology refers to the application of living organisms and their cellular, sub-cellular or molecular components to create products and processes (1). These techniques can be used to introduce desirable characteristics in existing biological species more rapidly and precisely than has been possible with conventional practices. The aim is to produce processes which provide and encourage environmentally sustainable development. It is hoped that existing products will be produced in greater quantities and the new processes will be more efficient. Process Biotechnology or Biochemical Engineering involves interfacing process will be more efficient. Process Biotechnology or Biochemical Engineering involves interfacing process engineering principles and practice with the biological sciences. It involves studying the opportunities that the latter offer and impose upon fermentation, fermenter design and control, product separation and materials handling.

As part of its development thrust in the nineties the Department of Chemical Engineering recognised the importance of process biotechnology as an important area for development in the Caribbean region. It supported the view that Biotechnology in its most general sense can help meet societal needs. Internationally, it has demonstrated the potential to satisfy to current and future human needs and expectation in human health care, agricultural practice, food and feed supply. The social, commercial, industrial and environmental benefits to this Caribbean region has to be investigated. The Department has been carrying out limited research in the field of Process Biotechnology. Under the Inter-American Development Bank Loan programme, it is establishing laboratory facilities in the area. This is scheduled to include a microbiology laboratory, laboratory scale process biotechnology equipment and small pilot plant facilities. This paper identifies the major work undertaken in the area of Process Biotechnology, possible future trends and limitations associated with the new thrust. The comments are chiefly those of the author.