



## Summary

Fermentation is the metabolic process that converts sugar to acids, gases, or alcohol. It is carried by certain microorganisms like yeast and bacteria. Industrial fermentation is the intentional use of fermentation by microorganisms to make products on commercial scale. For commercial production of fermented products special designed fermenters are used. Fermenter is modular in nature and carries out all the processes of fermentation. A fermenter is frequently used as a synonym for bioreactor. A bioreactor is basically a device in which the organisms are cultivated to form the desired products. It is a containment system designed to give right environment for optimal growth and metabolic activity of the organism. Bioreactors will be integral to the development of many new high value products and the replacement of existing chemical based commodity processes. The proper selection and design of the bioreactor will determine the optimal commercial bioprocess and the corresponding capital investment. The bioreactor should be regarded as an isolated unit, but as part of an integrated unit operation with both upstream (preparation) and downstream( separations) unit operation.