

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
Belgaum – 590010



PROJECT REPORT ON
(06CH85)

**“DESIGN, FABRICATION AND PERFORMANCE
EVALUATION OF AIR ELUTRIATOR”**
(Sponsored by K.S.C.S.T)

Submitted in partial fulfillment of the requirements for the award of the degree

**BACHELOR OF ENGINEERING
IN
CHEMICAL ENGINEERING**

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ABSTRACT

An air elutriator is a device, which can separate particles into two or more fractions. Air currents are used in this unit to separate a substance into various particle sizes. For determining the particle size distribution of sub sieve range or the average particle size of the given sample this method is used. This method is profoundly used for particles with size ($>1\mu\text{m}$).

A vertically directed stream of gas or liquid (usually upwards) is passed. The smaller or lighter particles rise to the top (overflow) because their terminal velocities of any particle in any media can be calculated using Stoke's law.

In the present study the diameter, length of the elutriation column are chosen based on availability. Suitable accessories are selected and the unit is fabricated. The performance evaluation of the fabricated unit is carried out for various samples of small particle size range. The unit can also be used for determination of size and classification of minerals, particle size determination in paints, abrasives, detergents, cements, various adsorbents etc.,