

## SUMMARY

The bubble column with draught tube has recently drawn attention in relation to wastewater treatment and fermentation process. In such a column the gas is dispersed into the draught tube or into the annulus and a stable circulating liquid flow is induced by the density difference between the aerated liquid in the draught tube or into the annulus. This circulating liquid flow enhances the heat transfer between the fluid and the column wall and makes the liquid properties homogeneous in the column.

The solid-suspended bubble column with a draught tube and a conical bottom (usually with a  $\pi/3$  rad angle) is often called the pachuca tank and is used widely as an apparatus for leaching ores. To design a column of this type as a slurry reactor, the average gas holdup  $\epsilon_0$  and the volumetric liquid-phase mass transfer coefficient  $k_L a$  should be known.

The purpose of this study is to clarify experimentally the effects of column dimensions, gas velocity and properties of the liquid and the solid particles on  $\epsilon_0$  and  $k_L a$  in the solid-suspended bubble column with a draught tube and with a conical bottom in liquid solid batch operation.