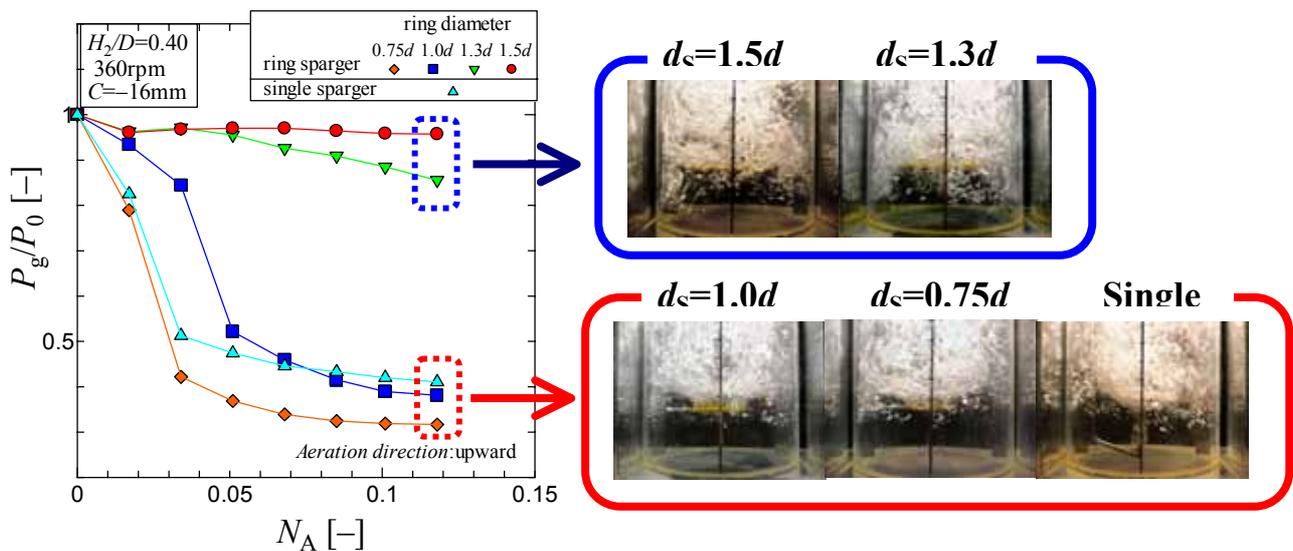


# PA02 The Effect of Sparger Geometry on Mass Transfer and Power Consumption in Gas-Liquid Agitated Vessels with Disk Turbine

Noboru Kamei, Yoshihito Kato, Junichi Ando, Yutaka Tada and Yuichiro Nagatsu  
Nagoya Institute of Technology

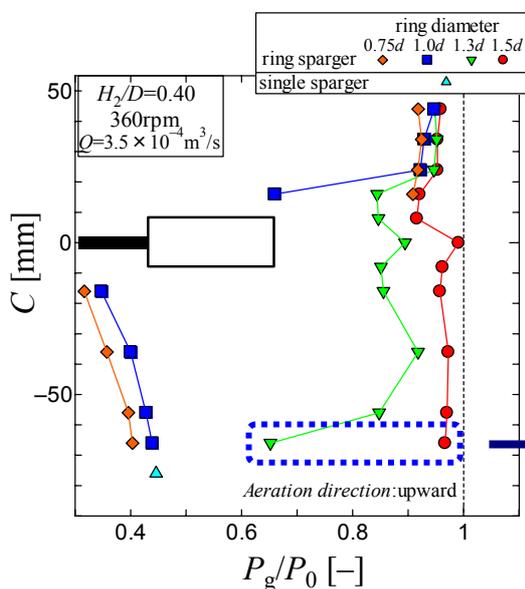
Gas-liquid agitation has been studied for various experimental conditions. The power consumption and the gas dispersion were investigated in a gas-liquid agitated vessel with disk turbine for various geometries and the positions of sparger and the direction of gas discharge. The power consumption under aeration changed with the direction of gas discharge and the sparger position.

## Effect of Aeration Number on Power Consumption (Upward Aeration)



This Figure shows the effect of aeration number on the ratio of power consumption to that without aeration  $P_g/P_0$  for various ring diameters at  $C=-16\text{mm}$  under upward aeration.

## Effect of Sparger Position on $P_g/P_0$ (Upward Aeration)



This figure shows the effect of sparger position on  $P_g/P_0$  for various ring diameters under upward aeration. The condition of  $d_s=1.3d$  at  $C=-66\text{mm}$  was able to break up the bubbles and to disperse the gas throughout the vessel more compared with the other conditions.

