

# DESULFURIZATION OF BIOGAS BY AERATION



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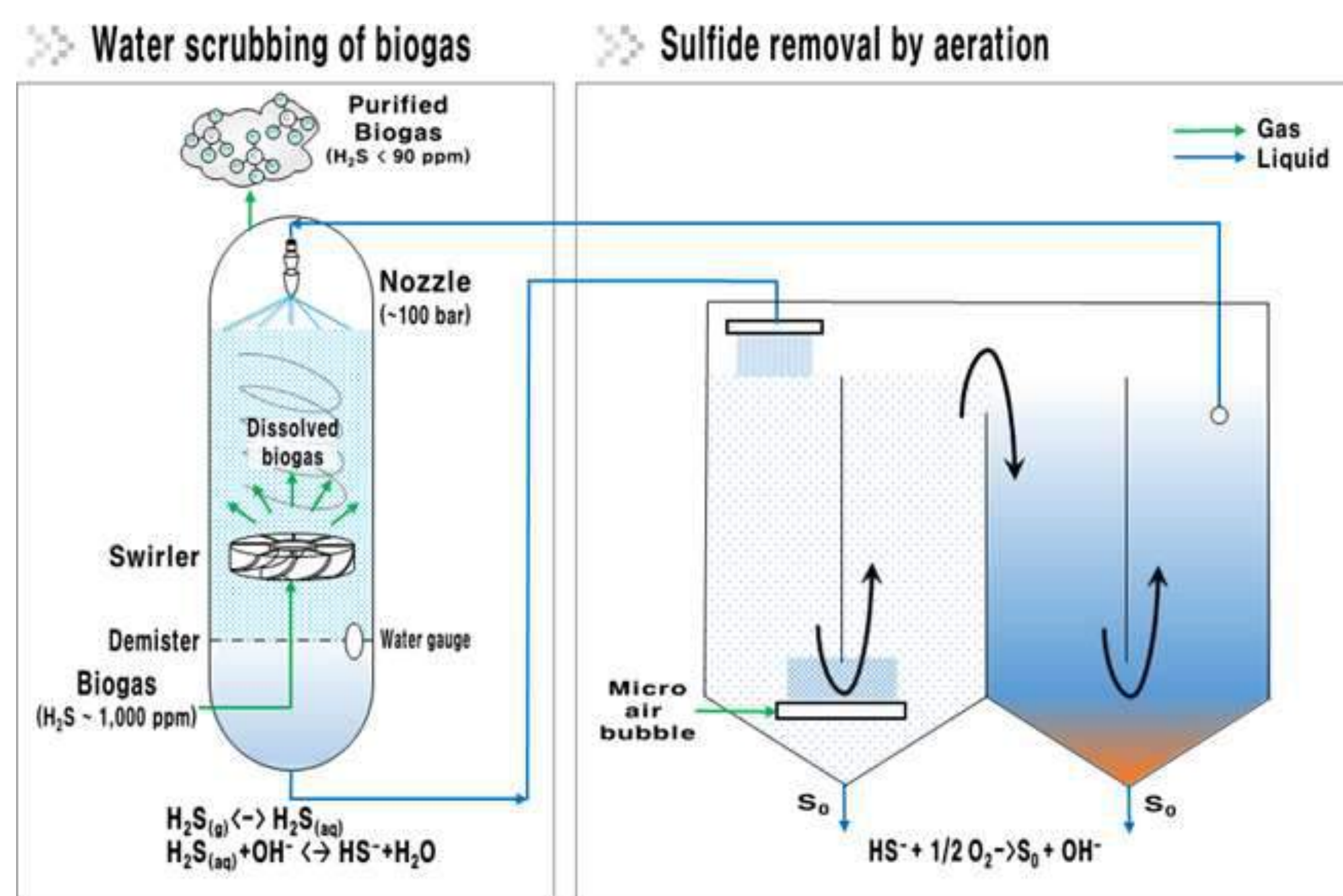
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## Abstract

Due to demands for renewable energy production and proper waste treatment, the interest on anaerobic digestion of organic waste has increased globally. The more value added utilization of biogas would require the higher level of purification. Especially, it is essential to remove hydrogen sulfide ( $H_2S$ ), the most abundant, corrosive, and harmful impurity in biogas. However, conventional  $H_2S$  removal processes require enormous amount of installation and operation costs. In this study, the injection of air with  $H_2S$ -laden biogas into water was investigated in a full-scale biogas power generation facility utilizing 5  $m^3/min$  of biogas. Dissolved iron concentration in the liquid medium significantly affected the oxidation efficiency of sulfide. Iron components in digestion effluent and landfill leachate, which would be available in a biogas/landfill gas utilization facility, was compatible with an external iron chelate. More than 70% of  $H_2S$  was removed in a contact time of 9 seconds at iron levels at or over 28 mM. The air injection would be a feasible and easy-to-operate technology for biogas purification.

## Material and methods



## Acknowledgement

This work was supported under the framework of international cooperation program managed by National Research Foundation of Korea(2016K2A9A1A01951892).

## Introduction



## Result and discussion

