**《Industrial and engineering chemistry》杂志刊登“环形喷嘴喷射器曝气系统中水流运动及其氧传质特性”**

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刊物：《Industrial and engineering chemistry》，2013年，52(4)，1756-1763页

关键词：氧传质特性；环形喷嘴喷射器；鼓风曝气；喷射系数

摘要：本文旨在研究环形喷嘴喷射器曝气系统中气液流动和氧的传质特性，以及射流曝气器和鼓风曝气器中氧的传质特性的评价。在6.8到0.4之间，喷射系统随环形喷嘴喷射器中气液流量的减小而降低。研究发现，湍流度和喷射系数对气泡大小和体积传质系数有显著影响。射流曝气器中溶解氧饱和时间和体积传质系数随吸入的空气量不同而变化，鼓风曝气器溶解氧饱和时间随空气量增加而减少，传质系数随空气量增加而增大。射流曝气器的平均传质系数比鼓风曝气器高3.7倍。因此，为提高氧传质速率，较高湍流度和优化喷射系数是十分必要的。

**Flow and Oxygen-Transfer Characteristics in an Aeration System Using an Annular Nozzle Ejector**

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Journal: Industrial and engineering chemistry, 2013, 52(4), Pages 1756-1763

Key word: Oxygen-transfer characteristics; Annular nozzle ejector; Blower aeration; Entrainment ratio

Abstract: This paper is aimed at the investigation of flow and oxygen-transfer characteristics in an aeration system using an annular nozzle ejector, and the experimental evaluation of the oxygen-transfer characteristics in the ejector aeration and blower aeration. The entrainment ratio decreased with the primary water flow rate of the annular nozzle ejector, with ratios ranging between 6.8 and 0.4. It was found that the turbulence level and entrainment ratio strongly affected the air bubble size and the volumetric mass-transfer coefficient. The saturation times and volumetric mass-transfer coefficients varied with the suction air flow rate in the ejector aeration, while the times decreased and the coefficients increased with the blowing air flow rate in the blower aeration. The average mass-transfer coefficient of the ejector aeration was about 3.7 times higher than that of the blower aeration. It was found that the high turbulence level and optimum entrainment ratio were needed to increase the oxygen-transfer rate.

原文链接：http://pubs.acs.org/doi/abs/10.1021/ie302208e?prevSearch=Flow%2Band%2BOxygen-Transfer%2BCharacteristics%2Bin%2Ban%2BAeration%2BSystem&searchHistoryKey=

**翻译：**胡鹏 ；**审核：翟家齐**