Principal component analysis (PCA)

The distance between sludge samples shown in Fig.S1 reflected the succession of the bacterial community structures in R1 and R0 under different aeration rates. The sludge samples C3 and S3 were located relatively far at first. With further increase of aeration rates, it was obvious that the distance between S4 and C4 was small. It suggested that the microbial communities in R1 and R0 at this time were similar. However, the community structures in S7, S8, C7 and C8 shifted a lot from that in S3, S4, C3 and C4, indicating the aeration rate had an impact on the reactors and contributed to the succession of the bacterial community structures in R1 and R0. Besides this, the distance between sludge samples in R0 changed more significantly than that in R1. This showed that the microbial community structure in R1 was less affected by the aeration rate.

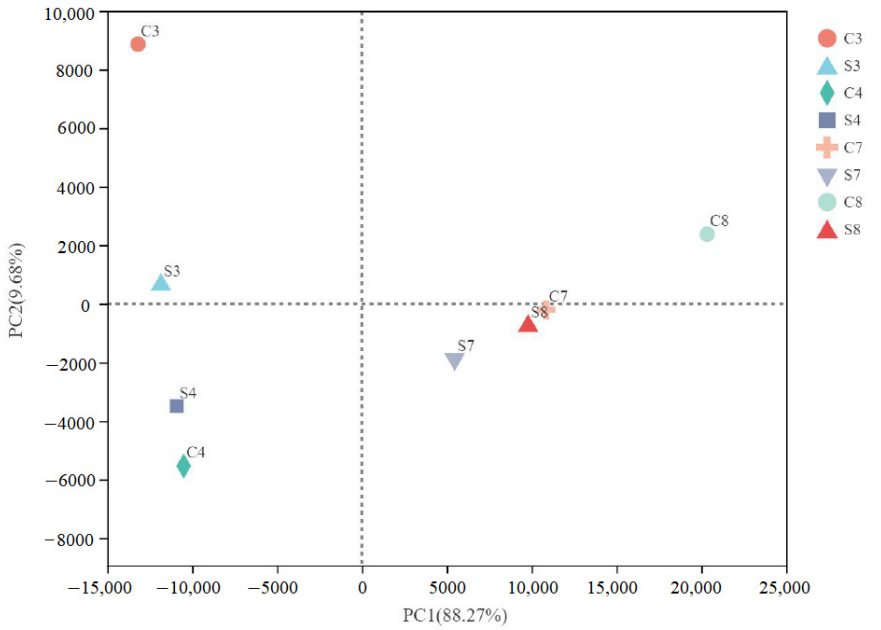

Figure S1. Principal component analysis between bacterial communities in different samples under different aeration rates.