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Experimental investigation and modeling of viscosity effect on carbon dioxide absorption using sodium hydroxide

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Highlights

- Xanthan is used to study solution viscosity effects on CO_2 conversion rate.
- CO_2 capture rate was mostly affected by sorbent concentration.
- Effectiveness contribution of Xanthan loading on solution viscosity was 75%.
- Effectiveness contribution of Xanthan loading on solution surface tension was 65%.
- Maximum CO_2 conversion rate occurred at 30°C and solution film thickness of 0.8mm.