

이산화탄소 배출량 감소를 위한 녹색전환기술 적용
전과정분석방법 연구

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In order to make the best choice between green conversion technologies (chemical absorbent to bioabsorbent for the removal of CO₂ emission in the cement industry), it is important to be able to compare these technologies on the basis of their sustainability, which may include a variety of environmental indicators. This study examined the comparative sustainability of green energy technologies in terms of their life cycle CO₂ emissions, using life cycle analysis. The models developed were based on case studies of CO₂ abatement process in the pilot plant of 10m³/hr scale. The comparative results showed that are removal efficiency of CO₂ in the process was associated with chemical absorbents, the reduction of CO₂ emission is 6kg of CO₂ /kg-Absorbent. The production of CO₂ emissions can be obtained 4.1kg/kg-Absorbent by the chemical manufacturing process of absorbents, it means that this indicator should be applied to gain acomplete picture of the technologies studied in the life cycle analysis. The utilization of mixed bioabsorbent abated CO₂ emission of -1.1kg/kg-Absorbent in comparison with the conventional results of chemical absorbent (a ratio of mixed bioabsorbent is 2:1 of biomaterial vs. chemicals) based on the assumption of the removal efficiency 95% of CO₂ in the chemical industry.