

인공지능을 이용한 지속가능한 공정설계의 가속화 : CCU 공정

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Achieving the Carbon Neutrality requires the transformation of material and energy systems. Greenhouse gas, a major component of global warming, is generated in various sectors such as manufacturing(31%), electricity(27%), plant and animal growing(19%), transportation(16%), and heating and cooling(7%). In order to reduce GHG emission, it is necessary to convert existing products and processes into eco-friendly ones. However, since this transformation requires a lot of cost, a new design methodology that can satisfy both economic and environmental aspect is required, and design automation based on artificial intelligence is required to accelerate the design and analysis on numerous products and processes. In this study, we propose SFI (Sustainable Feasibility Index) as a performance index for sustainable process design, and propose an integrated process design automation framework that enables design data acquisition, design automation, and process analysis using artificial intelligence, and then present a case study of CCU.