**DWSIM simulation of absorption column for carbon dioxide removal in ammonia synthesis plant**

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*Abstract-*Carbon dioxide is a poison to the catalyst of ammonia synthesis. It is a by-product formed during the shift conversion reaction to produce hydrogen for use in the ammonia synthesis. The carbon dioxide formed is separated from the product gas by absorption using water or other aqueous solutions. In this work, a tray type absorption column used in the CO2 removal in an ammonia synthesis plant is modelled using DWSIM. Effect of various operational parameters such as feed concentration, solvent type, flow rates, etc. were studied for the CO2 absorption efficiency. The simulation results obtained were comparable to that available in literature.

Keywords: carbon dioxide, absorption, ammonia synthesis,