

## Methane Purification from Landfill Gas by using Liquid Absorption

양끝 가르<sup>1</sup>, Dal Chand Spah<sup>1,2</sup>, 송호준<sup>1</sup>, 이승문<sup>3</sup>, 박종진<sup>1</sup>,  
박진원<sup>1,\*</sup>

<sup>1</sup>연세대학교 화학공학과; <sup>2</sup>Department of Chemistry, Government College, Gohana,  
Maharishi Dayanand University Rohtak; <sup>3</sup>Clean Energy Institute, University of  
Hartford  
(jwpark@yonsei.ac.kr\*)

The amount of waste around the world is increasing. The most preferred way to get rid of solid waste is land filling. After waste is dumped landfill gas is generated by decomposition of waste. It mainly consists of CH<sub>4</sub> and CO<sub>2</sub>. Both of these gases are green house gases. CH<sub>4</sub> has high calorific value thus separating CH<sub>4</sub> from CO<sub>2</sub> would be of great commercial interest. CO<sub>2</sub> can be captured and stored. Among numerous processes of separating landfill gas mixture such PSA, Membrane separation and liquid absorption our work focuses on liquid absorption since it is effective and economical method as compared to the other options. It is also the widely used method for CO<sub>2</sub> capture. Liquid absorbents like Monoethanolamine (MEA), Dietanolamine (DEA), and Isobutanolamine (AMP), have been used for CO<sub>2</sub> absorption. In experiment different weight percent of liquid absorbents have been used. Screening test apparatus is used to calculate the solubility of CO<sub>2</sub> in various liquid absorbents as mentioned above.