Technology Development for NOx removal in LNG (Liquefied Natural Gas) terminal

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In this work, a new methodology was developed to reduce total amounts of NOx release from SCV (Submerged Combustion Vessel) that is generally used to supply natural gas in LNG tank terminal. For this, a small scaled modified SCV setting was developed for experiment, and it was operated under various operating conditions (i.e., changes of flue gas residence time in water bath, flowrate of injected air, water temperature and pH of water). Then, RSM and ANN were separately adopted to build a model of the SCV. Lastly, they were integrated with GA (Genetic Algorithm), and the operating parameters were optimized to maximize total amounts of NOx removal from the SCV.