

Techno-economic Evaluation of Methanol Production from Steel-work Off-gases

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Export gases from iron-making processes are typically used as an energy source for heat and power generation within the iron and steel industry. This study deals with the simulation of methanol production from off-gases with the application of simulator Aspen plus, followed by techno-economical evaluation. To minimize required utility usage, heat exchanger network is designed and showed the result that total usable heat generated is enough to be supplied to the process autonomously. Utility requirement and excess electricity result from heat integration network analysis is also considered in techno-economic evaluation. Net present value(NPV) is calculated by the sum of NPV of gross profit, total product cost(TPC), tax, and capital depreciation based on cash flow analysis. And finally suggest a minimum selling price(MSP) of methanol to assess the feasibility of the project.