

«MIP Engineering-IV 2022»

«Development and modeling of a resource-saving methanol recovery process diagram »

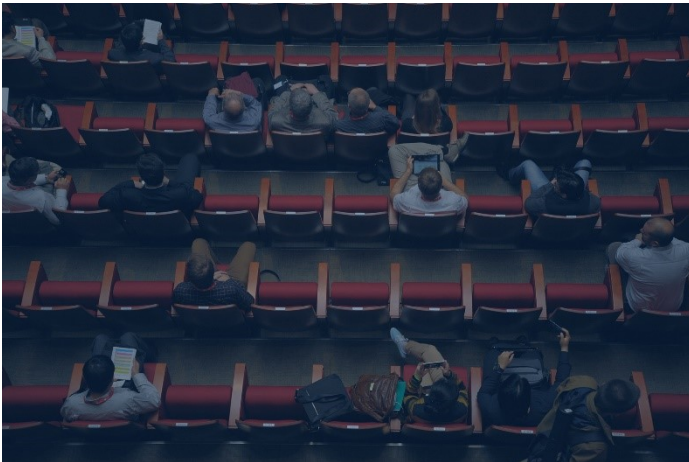
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Problem statement

- The development of resource-saving technologies is an important area for the gas industry.
- When developing gas fields in cold climate conditions, it is necessary to take into account the possibility of hydrate formation.
- In order to prevent the formation of hydrates in the gas stream, it is necessary to eliminate at least one of the conditions of their existence.
- The main methods of hydrate control are pressure reduction, temperature increase and introduction of antihydrate inhibitors.

METHANOL RECOVERY METHODS

- Methanol regeneration by rectification
- Methanol regeneration by blow-off
- Methanol regeneration unit simulation by rectification method



Conclusions

- When modeling the existing methanol blow-off scheme, we found an insufficient degree of regeneration. In order to improve the regeneration efficiency, it is necessary to supplement the existing process diagram with an additional stage.
- We have simulated an additional regeneration stage in the UniSim program. The products of the regeneration unit are: saturated 95% methanol solution, water with a methanol content of 23 g/dm³.
- The implementation of this installation allows us to solve two problems at once. Due to the production of an additional amount of saturated methanol solution, the total cost of using a fresh inhibitor is reduced. Treatment of industrial effluents to methanol content of 23 g/dm³ will allow their disposal into absorbing wells without violation of environmental standards.

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