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Removal of monoethylene glycol from gas field wastewater using *Aspergillus* tubingensis and a new bioreactor

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Monoethylene glycol (MEG) is used in the oil and gas industry to prevent freezing along well-to-refinery natural-gas transmission lines. Once the gas reaches the refinery, the MEG is then separated from the gas. In this process MEG is introduced to the refinery wastewater, making it extremely polluted and hazardous to the aquatic environment. Therefore, it is important to remove this substance from refinery wastewaters. This study examined the use of a microorganism in a glass reactor to remove MEG from wastewater generated at South Pars Gas Field Phase 4, Bushehr, Iran. A novel reactor satisfying the experimental conditions was built. The microorganism Aspergillus tubingensis was isolated from wastewater containing MEG and identified using a polymerized chain reaction (PCR) buffer. The microorganism was fixed on a packed bed and transported to the glass reactor. Sampling and measurements of chemical oxygen demand (COD), pH values, and MEG concentration were performed at different periods. After 240 h, a 65% decrease in COD was achieved and MEG concentration was reduced by more than 40%.

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Artificial lift selection in one of the oil reservoirs in Iran

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Artificial lift method is used to improve the production rate from the reservoir. Artificial lift system can be optimized using PVT data along with fluid and multiphase flow correlations. Reduction in production rate and increasing the overall operating cost of the project are the results of improper artificial lift selection. In this study, a comparison study has been carried out to select the best artificial lift method suitable for one of the oil reservoirs in south west of Iran. Different production scenarios including natural flow from the reservoir, use of electrical submersible pump, and gas lift methods were analyzed in details. Simulation data were used and the best method was selected based on the production rate.

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