

## عنوان مقاله:

Assessment of Carbon Monoxide Emission Mitigation in a Recuperative Methanol Synthesis Reactor

## محل انتشار:

دومین کنفرانس بین المللی مهندسی و تکنولوژی های سبز برای آینده پایدار (سال: 1395)

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## خلاصه مقاله:

Carbon monoxide (CO), a gaseous pollutant, is emitted from industrial chemical processes as a result of incomplete combustion of carbonaceous fuels and may cause harmful effects on human health and the environment. One of the main global challenges in the years to come is to reduce the CO emissions. Conversion of CO into methanol by catalytic hydrogenation has been recognized as one of the most promising processes for reducing CO emissions and thereupon stabilizing the atmospheric CO level. In this paper, conversion of CO in a cascade membrane methanol reactor (CMMR) was investigated. A dynamic model for this methanol synthesis reactor in the presence of long term catalyst deactivation was developed. The wall of the tubes in the both of reactors is covered with a palladium-silver membrane. The simulation results represent considerable enhancement in the CO removal rate during 1400 days of operation in the CMMR in comparison with conventional dual type methanol reactor (CDMR) and membrane dual type (methanol reactor (MDM).

## کلمات کلیدی:

Carbon monoxide emission, Methanol synthesis, Cascade membrane reactor, Catalyst deactivation, Hydrogen perm-selective membrane

## لینک ثابت مقاله در پایگاه سیویلیکا:

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