

Preparation and characterization of Ni-Foam based Reforming Catalyst

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The design of high performance catalyst, compact reactor and process plays an important role in the commercialization of offshore GTL(gas to liquid) - FPSO(floating, production, storage and offloading) process. Micro-macro channel reactor is one of the possible candidates for the design of compact reactor. In a micro-macro channel steam reformer, the wall temperature of reactor can be significantly reduced by using a metal foam based catalyst. The metal foam based catalyst has the advantage on high thermal conductivity, large specific surface area, high rate of mixing and higher catalytic efficiency over pellet based catalyst.

In this work, the preparation and characterization of modified metal foam and metal foam based catalyst were investigated for applications in the design of compact reactor, in GTL-FPSO process.