

INDIRECT LIQUEFACTION CONTRACTOR'S REVIEW MEETING
ABSTRACT

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Title: The Development of a Cobalt Catalyst
for use in Slurry Reactors

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Objective: The objective of this program is to elucidate the relationship between catalytic properties and function of cobalt Fischer-Tropsch (F-T) catalysts and to apply this fundamental knowledge for developing a stable cobalt catalyst with low C_1+C_2 selectivity in slurry reactors.

Technical Approach:

1. Modify the existing catalyst testing plant.
2. Apply reverse micelle technique to develop a cobalt catalyst with low-methane selectivity.
3. Use the fixed-bed reactor for rapid screening of catalysts.
4. Test selected catalysts in the slurry reactor.
5. Improve performance of cobalt catalyst by introducing a second bimetallic component.
6. Introduce water-gas shift activity to the cobalt catalyst.
7. Demonstrate the best catalyst in an extended test in the slurry reactor.

Significant Accomplishments:

1. The existing catalyst testing plant was modified to operate the slurry and fixed-bed reactors simultaneously.
2. Reverse micelle technique has been applied to cobalt catalysts, and the catalyst synthesis strategy has been devised.