

IX. INVENTION DISCLOSURES

Three invention disclosures have been generated as a result of the efforts on this project. The titles of these disclosures are as follows:

1. Catalysts For The Synthesis of Alcohol-Based Transportation Fuels (DOE Case No. S-57,689).
2. Synthesis of Low Boiling Alcohols and Hydrocarbons Utilizing a Slurry-Phase Reaction System (DOE Case No. S-57,690).
3. Method To Produce Low Boiling Alcohols Utilizing Synthesis Catalysts Having Water Gas Shift Activity (DOE Case No. S-57,692).

Case S-57689 was filed on December 16, 1982 in the U.S. Patent Office. Cases S-57690 and S-57692 were abandoned.

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X. TECHNICAL PAPERS

A technical paper entitled "Alcohol-Based Synthetic Motor Fuels From Coal-Derived Synthesis Gas" was presented at the Summer, 1981 AIChE National Meeting held in Detroit on August 18, 1981.

A technical paper entitled "Alcohol-Based Fuels From Syngases" was published in Chemical Engineering Progress in August, 1982.

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XIII. APPENDIX

A. Catalyst Classification of Catalyst Compositions

CATALYST COMPOSITION CLASSIFICATION

- Group I: Catalysts containing Cu, Zn, Co, Cr and alkali
- Group II: Catalysts of Group I without Zn, Co, or Cr
- Group III: Modified methanol synthesis catalysts
- Group IV: Catalysts of Group I, where Cr is substituted by transition metal(s) such as Fe, Mn, Ti, Th, etc.
- Group V: Catalysts of Groups I, II or IV supported on inert oxides such as SiO_2 , TiO_2 or MnO
- Group VI: Cobalt carbonyl and potassium-impregnated methanol synthesis catalysts
- Group VII: Ternary catalysts containing Cu, Co, and K
- Group VIII: Binary catalysts containing Cu or Co and K