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DEPARTMENT OF CHEMISTRY

BERKELEY, CALIFORNIA 94720

February 7, 1974

Professor W. F. Libby  
Department of Chemistry  
University of California  
Los Angeles, California

Dear Professor Libby,

I have had a chance to carefully review the Proceeding of the Electric Power Research Institute Conference on "Coal Catalysis". The Proceeding contains a great deal of very important information and I enthusiastically concur with the recommendation especially as the high priority and medium priority areas are concerned. I agree with you that the combination catalyst that would directly shift the coal-water reaction in such a way to produce a high concentration of methane would be a very important development and it requires the study and development of unique catalysts. I am sure that coal gasification by this method is going to be one of the major important areas in research and development in this field.

Your suggestion of studying the coal liquification by catalysts of various types is a very important one indeed. Although the Lewis acid catalysts that have been used are the only ones mentioned, I am sure that one can develop metal-organic systems and other types of catalysts that would selectively hydrogenate and carry out hydrogenolysis of coal, perhaps even underground. I think that this area is certainly as important for the development of liquid fuels as the first area is to develop gaseous methane as a fuel.

The third high priority area, the investigation of the mechanism of bond breaking and coal catalysis, is, of course, the major scientific question that faces us in trying to carry out important hydrogenation and hydrogenolysis reaction on coal. The development of Fischer-Tropsch catalysts to produce various petro-chemicals is going to be a very important technique since the ever-rising cost of crude oil will make the products of water-gas reactions very competitive as raw materials for petro-chemicals in the future.

Finally, the deactivation and reactivation of heterogeneous catalysts will always be a problem no matter which way they are being used, whether for liquification or gasification of coal.

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All-in-all, you have done a splendid job establishing high-priority areas for studying coal gasification and liquification. I whole-heartedly support the program and I hope that financial assistance will be available to carry out this extremely important research area which is in the national interest. It would be very short-sighted indeed not to fund this project in order to develop novel and important new approaches to liquify and gasify coal.

With my best regards,

Sincerely yours,



G. A. Somorjai  
Professor of Chemistry

GAS: knk