

Extreme coalification: From lignite to anthracite in one career

Harold H Schobert

The Energy Institute, Pennsylvania State University, C211 Coal Utilization Lab, University Park, PA 16802, Fax: (814)863-8897, schobert@ems.psu.edu

A retrospective and idiosyncratic review of coal chemistry. The specific emphasis focuses on (1) internal hydrogen transfer during coal reactions (without an external hydrogen source or hydrogen donors); (2) the role of net hydrogen as a correlative parameter for coal reactions; and (3) the advantages for coal conversion process development for producing high-value carbon products along with coal chemicals or liquid fuels. Examples will be drawn from the liquefaction chemistry of low-rank coals; co-coking of high-volatile bituminous coals for simultaneous production of coal-based jet fuel and needle coke; using medium-volatile bituminous coals as a source of hydrogen; and explorations of the chemistry of anthracite, including graphitization reactions.

A full manuscript will be published in Fuel.