

SYNTHETIC FUEL GAS PURIFICATION USING SHELL TREATING PROCESSES. E. J. Fisch,
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While fuel gas manufacture may initially be based upon gasification of lighter petroleum fractions which are essentially free of sulfur and other impurities, the energy supply industry will eventually turn to gasification of heavier raw materials, coal and crude oil. These materials however, will require more intensive processing, not only because of their lower hydrogen-to-carbon content ratios, but because of their higher contents of impurities, particularly sulfur. Because of society's unwillingness to tolerate even the present level of sulfur emissions, the application of gasification processes to these raw materials will require attendant means of removing the sulfur to acceptable levels in all product streams. Present technology does not offer economical means to adequately desulfurize coal or crude oil prior to gasification. Therefore, sulfur removal will most likely be effected by treating of intermediate or product gas streams. Three gas treating processes developed by Shell for general application for sulfur removal are applicable at one or more points in the manufacture of fuel gases. These are the SULFINOL, ADIP, and SCOT processes. The application of these processes is illustrated by cases for the production of (a) 1000 Btu per cubic foot substitute natural gas, (b) 400-500 Btu per cubic foot gas generated from coal for transportation to power generation units, and (c) 150 Btu per cubic foot gas from crude oil (residue) or coal for power generation via a combined gas/stream turbine cycle.