



Sulfide Removal for Clean Stack Gas

A method for burning residual fuel oils containing sulfide and vanadium so that the exhaust air is not polluted nor equipment corroded has been devised by eight Russian scientists.

Sergei A. Khristianovich and his colleagues assigned rights to patent 3,287,902 to Institute Teoreticheskoi i prikladnoi Mekhaniki sibirskogo Otdelenia Akademii Nauk, Novosibirsk.

Their method consists of partially oxidizing the entire amount of initial fuel at temperatures between 1,000 and 1,500 degrees C. under pressure up to the highest available from the power generation cycle. Burning is accomplished using part of the air required for complete burning, resulting in complete gasification of the initial fuel.

The gaseous products are cooled by indirect heat exchange with a portion of the power system to a temperature at which the sulfur compounds, as well as soot and ash, can be removed. The

cleaned gaseous products are then mixed with spent steam exhausted from the turbine and burned at a temperature of 750 degrees C.

Chemicals for Detergents

A new class of chemicals, useful for detergents was disclosed in three patents granted here last week by the U.S. Patent Office.

The chemicals are made starting with dimethyl sulfoxide, or DMSO, a by-product produced in the manufacture of wood pulp and a widely used commercial solvent. DMSO in purified form was touted as a cure-all drug beneficial in treating a wide variety of ills, from arthritis and bursitis to headaches and burns. Clinical experiments with DMSO are now virtually suspended pending an investigation by the Food and Drug Administration.

Commercial DMSO is a colorless liquid with a faint odor that has been described as resembling garlic. It is treated with such strong alkalis as sodium and potassium, forming sodium and potassium methanesulfonates that are then reacted with alkyl bromides to form sulfoxides, which make good detergents.

The three patents, 3,288,858 through 3,288,860, were issued to Drs. Warren I. Lyness, David E. O'Connor and Jim S. Berry, who assigned rights to Proctor & Gamble Company, Cincinnati.

Dr. Lyness said in a telephone interview that most of the detergents would be "bio-degradable," or disintegrate in water rather than foam up rivers and streams. He noted that one unexpected finding was that sodium and potassium methanesulfonates are stable several days at room temperature.

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