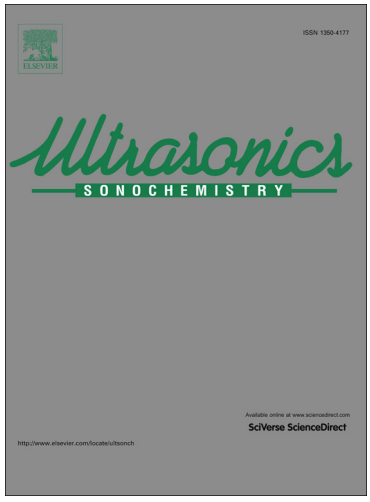

Review

Ultrasound-assisted oxidative desulfurization and denitrogenation of liquid hydrocarbon fuels: a critical review

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Ultrasound-assisted oxidative desulfurization and denitrogenation of liquid hydrocarbon fuels: a critical review

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Abstract

Nowadays, a continuously worldwide concern for development of process to produce ultra-low sulfur and nitrogen fuels have been emerged. Typical hydrodesulfurization and hydrodenitrogenation technology deals with important difficulties such as high pressure and temperature operating condition, failure to treat some recalcitrant compounds and limitations to meet the stringent environmental regulations. In contrary an advanced oxidation process that is ultrasound assisted oxidative desulfurization and denitrogenation satisfies latest environmental regulations in much milder conditions with more efficiency. The present work deals with a comprehensive review on findings and development in the ultrasound assisted oxidative desulfurization and denitrogenation (UAOD) during the last decades. The role of individual parameters namely temperature, residence time, ultrasound power and frequency, pH, initial concentration and types of sulfur and nitrogen compounds on the efficiency are described. What's more another treatment properties that is role of phase transfer agent (PTA) and solvents