Special Issue

State-of-the-Art in Catalysts for the Hydroconversion of Heavy Oils

Message from the Guest Editor

Catalytic hydroconversion produces clean fuels and petrochemical feedstocks by removing heteroatoms including metal, sulfur, nitrogen, oxygen, and trace contaminants, and by converting large hydrocarbon molecules into smaller, more-valuable molecules, and thus will continue to be gain importance because of the increasingly strict environmental regulations, the decreasing quality of crude oil, and growth in the demand for upgrading unconventional heavy oils. Many technological difficulties still remain in the catalytic hydroconversion of heavy oils, which is entirely different from those for model molecules and middle distillates because of the high content of heteroatoms deriving a fast catalyst deactivation. Therefore, the development of better catalysts to achieve a high activity, selectivity, and life is of great importance for optimizing hydroconversion processes. This Special Issue aims to cover recent progress and trends in designing, synthesizing, characterizing, and evaluating advanced catalysts for both hydrocracking and hydrotreating, as well as a theoretical understanding of the hydroconversion of heavy oils.

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