



Heterogeneous Catalysis of First Row Transition Metals and Oxides: Kinetic and Experimental Studies

Guest Editors:

Dr. Morris D. Argyle

Chemical Engineering
Department, Brigham Young
University, Provo, UT 84602, USA

Dr. Kara J. Stowers

Department of Chemistry and
Biochemistry, Brigham Young
University, Provo, UT 84602, USA

Deadline for manuscript
submissions:

31 August 2024

Message from the Guest Editors

Production and conversion of light alkanes are fundamental research areas in heterogeneous catalysis in which first-row transition metals and their oxides play important roles, due to their effectiveness, low cost, and abundance. Examples like vanadium, iron, cobalt, and nickel are used in reactions as varied as oxidative dehydrogenation of light alkanes, Fischer–Tropsch synthesis, methanation, and many others that either produce light alkanes or convert them to more valuable compounds. These metals and metal oxides with 3D electrons have the potential for multiple oxidation states as well as defect sites and vacancies that influence the production or conversion of light hydrocarbons. Papers examining surface chemistry, stoichiometric/non-stoichiometric surface oxides, and other surface science investigations of their effect on catalysis are especially invited. Further, submissions discussing micro-kinetics, elementary step analysis, and rate laws are welcome and encouraged.

