Special Issue

Frontiers in Single-Atom Alloy Catalysis

Message from the Guest Editors

Heterogeneous single-site catalysts comprising isolated single atoms immobilized on various supports exhibit promising potential as superior catalysts for energy conversion applications due to their extremely high atom utilization efficiency, unique atomic structure, and exceptional catalytic selectivity. Emerging as a new class of single-site catalysts, single-atom alloy catalysts play an increasingly significant role in industrially important catalytic reactions, such as electro-, photo-, and thermal catalysis, which can be constructed by the introduction of reactive single metal atoms anchored onto more inert host metals. This Special Issue will focus on recent advances in emerging single-atom alloy catalysts for a wide variety of catalytic applications, as well as experimental and computational studies on the bonding in single-atom alloy catalysts and the relationship between the isolated metal atoms and their catalytic performance. Papers related to the industrial scale-up of single-atom alloys are of interest as well. We welcome the submission of rapid communications, original research articles, and review articles.

Guest Editors

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Deadline for manuscript submissions

closed (28 February 2022)

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