

Response to Reviewer 3 Comments

This manuscript tried to review the recent progress in the hierarchical zeolite materials for the production of renewable monomers from bioethanol in terms of catalyst preparation, characterization, and catalytic studies. Overall, this manuscript is well composed, the language is qualified, and the reference is updated. However, introduction part should be improved and the literature information should be summarized in a better way. Therefore, I suggest a minor revision before publishing this review manuscript in catalysts. My comments are as follows:

Point 1: An additional paragraph should be added to the end of the Introduction Section to describe the organization of this review paper, and in which order you will review this topic, so that it can be easier for the readers to grasp the information they need.

Response 1: We thank the referee for the suggestion. We have added an additional paragraph about the organization of this review paper in the end of the Introduction Section following your comment in the revised version of manuscript.

“In this review, the preparation, characterization, and catalytic studies of hierarchical zeolites for bioethanol upgrading to various monomers are presented. In addition, the design and preparation of hierarchical zeolite catalysts are divided into three categories including the zeolite synthesis via bottom-up and top-down approaches and the metal incorporation into zeolite supports. For the further section, the characterization of hierarchical zeolite catalysts, which can be classified into two groups: (i) textural properties and pore architecture; (ii) acidic properties and active species, is demonstrated. For the last section, the catalytic behaviors of hierarchical zeolites in bioethanol conversion to monomers are divided into the catalytic activities and mechanistic studies in the bioethanol dehydration, bioethanol to hydrocarbons, and bioethanol to butadiene reactions.”

Point 2: The authors review the progress of the hierarchical zeolite catalysts in terms of preparation (Section 2), characterization (Section 3), and catalytic performance (Section 4). The review is comprehensive, however, the literature information should be summarized in a better way, not just copy and paste. The authors should summarize the key information in a table for each section. For example, for the synthesis section, the choice of different chemicals, organic templates, the metal precursors and the post-synthetic treatments; for the catalytic performance section, the choice of the catalysts, the testing conditions, the reported performance. If a these information can be summarized in a table for each section and supported by the corresponding reference, this review paper can be more readable.

Response 2: We thank the referee for the helpful suggestion. We have summarized the key information of each section in Table S1, S2, and S3 for the preparation, characterization, and catalytic performance, respectively.

“Supplementary Materials: The following are available online at www.mdpi.com/xxx/s1, Table S1: Summary of the preparation perspectives of hierarchical zeolite catalysts, Table S2: Characterization of hierarchical zeolite catalysts, Table S3: Catalytic behaviors of hierarchical zeolites in bioethanol conversion to monomers.”