Responses to Reviewers

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Title: Uniaxial deformation of nanowires in 16 refractory multi-principal element alloys

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We appreciate the time and efforts made by the editor and reviewers in reviewing this manuscript. We have addressed all issues indicated by the reviewers. Please find below our responses to reviewers in a point-by-point fashion. The revisions in the manuscript are provided in this letter and highlighted in yellow.

**Editor**

[Comment] *There still some grammatical, syntax or word usage errors in the manuscript. Please invite a native English speaker or language editing service to polish your submission again for conforming to idiomatic usages as well as to the rules of grammar.*

*Numerous relevant papers have been published in recent years especially since 2020. Some key, important or/and latest research results or reviewing papers in this field should be mentioned and cited in the section of introduction instead of outdated or earlier papers so that we can provide a solid background and progress to the readers regarding the current state-of-knowledge on this topic. Therefore, I strongly require you to reformulate this part and then update your citations, or it is very hard for me to accept your manuscript.*

*Any changes or revisions in the text should be highlighted by red color in the revised manuscript compare with that of the previous version.*

*The authors are not required/expected to cite the irrelevant references suggested by referees.*

[Reply] We thank the editor for the comments.

First, in the revised manuscript, we have corrected all grammatical errors and typos.

Second, in the original manuscript, among the first 50 references, 37 of them were published in or after 2020. Thus, we don’t believe that our reference list was outdated. Still, in the revised manuscript, we have cited 10 more papers that were published in 2022 and 2023, including Refs. [13,14,16,17,21,27,40,41,50,57].

**Reviewer #2**

[Comment 1] *The reviewer has one comment on the manuscript. On page 15, the authors wrote "This finding agrees with prior experiments [80] and simulations [81-83] that the plastic deformation becomes more homogeneous in RMPEAs than in pure metals." However, all those prior work is on dislocation slip only, NOT on twinning which is involved in the current work. The authors may clarify these details and add explanations, if possible, of the underlying physical mechanism of the reduced anisotropy in RMPEAs regardless of the plastic deformation mode.*

[Reply 1] We thank the reviewer for the comment. On page 15 of the revised manuscript, we have added “This finding agrees with prior experiments and simulations, where the dislocation was the only dominant plasticity carrier, that the plastic deformation becomes more homogeneous in RMPEAs than in pure metals. The current work additionally demonstrates that a reduced plastic anisotropy is achieved in RMPEAs even when twinning controls the plastic deformation. For both dislocation slips and twinning, lattice distortion is considered the root cause of the homogeneous plasticity in MPEAs.”