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RE: materials-1854249

Dear Editor Prof. Ms. Hallen Hu,

We thank the reviewers and the editor for the time in closely viewing our manuscript, and also thank the reviewers for giving us some constructive suggestions and comments to improve the quality of the paper. Here we submit a new version, which is modified according to the reviewers' suggestions. Efforts were also made carefully to correct the mistakes and improve the English of the manuscript. **All the changes are marked in red font** in the revised manuscript.

Thank you for your consideration and your precious working time!

Wish you all our best regards.

Sincerely yours,

Dr. Shengqiang Ma

The following is a point-to-point response to the reviewers' comments.

Reviewer #3

The article is well-structured and well-written: furthermore, the authors have done a good literature review to support their research. However, I consider that this research lacked an evaluation of the wear properties of these developed alloys, and the effect of Si on the wear properties of these alloys was not determined. On the other hand, it has been reported that steels with B have good behavior against wear. Therefore, I consider that this may be the weakness of this paper.

Response: Thank you very much for your kindly comments. Your suggestions are very well considered points, and we will deeply investigate and discuss the wear resistance of DS Fe-B alloy with various Si addition in the future work. Also, various wear conditions, such as different kinds of abrasion (e.g. soft abrasion and hard abrasion), wear loads and other parameters will be considered under a three-body abrasion or two-body abrasion tests to evaluate the effect of Si on the wear-resistant properties based on the worn surface morphologies and sub-surface damage of the DS alloys. Also, we will assess the influence of the orientation of Fe₂B and columnar grain spacing changed by Si addition on the wear-resistant properties with deep and systematic work in the future research. Thank you very much for the constructive and useful comments!