

Jury Member Report – Doctor of Philosophy thesis.

Name of Candidate: Vadim Sotskov

PhD Program: Materials Science and Engineering

Title of Thesis: Data-driven design of multicomponent alloys

Supervisor: Professor Alexander Shapeev

Name of the Reviewer:

I confirm the absence of any conflict of interest

Date: 21-10-2023

The purpose of this report is to obtain an independent review from the members of PhD defense Jury before the thesis defense. The members of PhD defense Jury are asked to submit signed copy of the report at least 30 days prior the thesis defense. The Reviewers are asked to bring a copy of the completed report to the thesis defense and to discuss the contents of each report with each other before the thesis defense.

If the reviewers have any queries about the thesis which they wish to raise in advance, please contact the Chair of the Jury.

Reviewer's Report

The thesis focuses on two relevant problems in materials physics and the approach is sound. The new method for generating structures is novel and a significant contribution to the thesis. The established approaches that are used (DFT, LRP, etc.) are up-to-date—the work is consistent with the state of the art.

The structure and presentation of the dissertation are of reasonable quality, and aside from fixing some small stylistic shortcomings (emailed to the student), I have no objection to proceeding to the formal defense.

Was the experimental work on HECs discussed in the thesis performed by the student? If not, that should be explicitly called out in the thesis. Any work not done by the student discussed in the thesis should be clearly mentioned as outside the student's work. On the other hand, if the work was done by the student, I find it impressive that the student has done both computational and experimental work.

Finally, I think the work that has been already published represents good evidence that the student has done work that merits receiving a PhD. Perhaps the number of publications is a little low, but the venues are good and the work is solid, so I am supportive of the student graduating.

Provisional Recommendation

I recommend that the candidate should defend the thesis by means of a formal thesis defense

I recommend that the candidate should defend the thesis by means of a formal thesis defense only after appropriate changes would be introduced in candidate's thesis according to the recommendations of the present report

The thesis is not acceptable and I recommend that the candidate be exempt from the formal thesis defense

