

WARSZAWSKA SZKOŁA DOKTORSKA NAUK ŚCISŁYCH I BIOMEDYCZNYCH
WARSAW-4-PHD
Warsaw Doctoral School in Natural and BioMedical Sciences

WYNIKI OCENY ŚRÓDOKRESOWEJ
Mid-Term Evaluation results

INSTYTUT FIZYKI PAN / INSTITUTE OF PHYSICS PAS

Nazwisko i Imię Surname and Name	Wynik oceny Mid-Term Evaluation result	Uzasadnienie oceny Justification of the assessment
AZIZ FIZA	pozytywna / positive	<p>During the first two years of studies, the PhD student managed to obtain some important results that may form the basis of her doctoral dissertation. These results have already been presented at an international conference and are currently being prepared for publication. The student has a good understanding of the research methods she uses, and also understands to a limited extent the importance of her research for the practical applications of the materials studied. However her efforts are concentrated on the standard technical tasks and it is difficult to find a novelty in them. The student obtained a series of structural data by refining the model of Ni₃V₂O₈ structure using the Rietveld method over a wide range of temperatures. Based on them, she determined the linear coefficients of thermal expansion and the volumetric coefficient of thermal expansion. Additionally, she conducted an analysis of changes in interatomic distances in the studied material. However, during the presentation, there was a lack of explanation of the observed anisotropy of thermal expansion of this material at the atomic level. Also, there was a lack of presenting the obtained results in a broader context, comparing the obtained data with other vanadates, such as the high-temperature characteristic of Ca₃V₂O₈ published last year by the same research group. It seems that the amount of the gathered data and the student's research efforts have been modest so far. The research plan can be considered fulfilled but also we find it is not ambitious and it does not provide the student with an exhaustive training expected for a PhD candidate in the discipline of physical/materials sciences. It looks that after completion of the thesis the student will be only familiar with X-ray diffractometry. In our opinion the research plan involves too narrow PhD training. To increase the value of the PhD thesis, it would be suggested that the structural research conducted by the PhD student be supplemented with additional research (e.g. research on elastic and electrical properties) in order to find a correlation between these properties and the crystal structure. The title of the doctoral dissertation also requires consideration. The doctoral student had problems explaining the meaning of the words "high and medium symmetry" in the proposed title of her doctoral thesis.</p>