Report on the outcomes of a presentation and participation - Inclusiveness Target Countries Conference[1]

Action number: CA21126

Grantee name: Mahammad Baghir Baghirov

Conference Details

Conference title: 19th Nanoscience and Nanotechnology Conference

Conference web-page: https://nanotr.org/

Conference venue[2]: Middle East Technical University (METU)

Conference start and end date: 27/08/2025 to 29/08/2025

Accepted contribution details

Title of the presentation: Dose-Dependent Structural Evolution of GO/PVA/AgNWs Nanocomposites under Gamma Radiation

Co-authors: Mustafa Muradov

Other details of the presentation: Session 13: D

Outcome of the conference participation

Participation in the conference with my presentation entitled "Dose-Dependent Structural Evolution of GO/PVA/AgNWs Nanocomposites under Gamma Radiation" provided me with significant scientific visibility and valuable networking opportunities. During the talk, I introduced the importance of nanocomposites based on graphene oxide (GO), polyvinyl alcohol (PVA), and silver nanowires (AgNWs), and discussed the specific effects of gamma irradiation on their structural and functional properties. I began by giving an overview of the role of gamma radiation in modifying carbon-based materials, highlighting the relevance of this approach for developing advanced materials with improved performance.

Subsequently, I presented the preliminary results of our research, focusing first on the structural evolution of pristine GO under gamma irradiation, followed by the investigation of GO/PVA/AgNWs nanocomposites. I detailed the methods applied, including X-ray diffraction (XRD) and Raman spectroscopy, and explained how these analyses enabled us to evaluate critical parameters such as crystallite size, defect distance, and defect concentration. I emphasized the observed dose-dependent changes and provided an analysis of how gamma radiation influences these structural parameters. In addition, I highlighted our findings regarding the most effective radiation dose in terms of enhancing the material's properties, which generated considerable interest from the audience.

[1] This report is submitted by the grantee to the Action MC for approval and for claiming payment of the awarded grant. The Grant Awarding Coordinator coordinates the evaluation of this report on behalf of the Action MC and instructs the GH for payment of the Grant.
[2] For an online conference, specify virtual participation; for hybrid conferences, specify whether it is an in-person or virtual participation.

The presentation sparked engaging discussions, particularly around the methodology. Several questions were raised concerning the preparation of the samples for irradiation, the choice of radiation source, and the importance of selecting an appropriate dose. Further interest was shown in the computational approaches used for data analysis, which indicated the scientific community's recognition of the novelty and rigor of our work. The interactive Q&A session not only underlined the relevance of the study but also positioned our research as an important contribution to the broader field of radiation-modified nanomaterials.

Beyond the presentation itself, participation in the conference facilitated fruitful networking opportunities. Notably, I had extensive discussions with representatives from the Zeiss group, during which we explored the potential for joint research activities. As a result of these conversations, we reached a preliminary agreement to collaborate, particularly with regard to conducting advanced measurements that will complement and expand our ongoing investigations. Such collaborations are expected to strengthen the quality and impact of our future research outcomes.

Overall, the conference provided a platform to enhance my professional visibility, to receive constructive feedback on my work, and to establish meaningful contacts for future cooperation. The exchange of ideas and the initiation of collaboration with the Zeiss group represent a tangible outcome that will directly benefit the progress of our research within the COST ITCG framework. I am confident that these results will contribute not only to the advancement of my individual academic career but also to the strengthening of international collaboration within the scientific community.

Applicant enters max. 500 word summary here.

Acknowledgement of inclusion of necessary supporting documents to claim the grant

I confirm that the following documents have been uploaded on e-COST as an integral part of this report:

- the certificate of conference attendance.

- the programme of the conference or book of abstracts / proceedings indicating the presentation (oral) of the grantee.

- copy of the given presentation (oral).