Report on the outcomes of a presentation and participation - Young Researcher and Innovator Conference[1]

Action number: CA21126

Grantee name: Young Researcher and Innovator Conference Grant

Conference Details

Conference title: Carbon 2025

Conference web-page: https://premc.org/carbon2025/

Conference venue[2]: Saint-Malo (France), at Grand large (Palais des Congrès)

Conference start and end date: 29/06/2025 to 4/07/2025

Accepted contribution details

Title of the presentation: Local Environments and Phonon Spectra in Twisted Bilayer Graphene: A Machine-Learning Perspective

Type of the presentation: oral

Co-authors: Yunus Emre Okyayli, Erdi Ata Bleda, Dogan Erbahar

Other details of the presentation: specify here any additional details related to the contribution (e.g. title of the session / track of the conference programme in which the contribution is accepted)

- Session: Topic 6 - Innovation in synthesis, processing, characterization and modelling
- Time: 09:50-10:10 am
- Chaired By:Dr. Cédric Pardanaud (AMU)
- Venue:Vabuan
- 4 July 2025,Friday

Outcome of the conference participation

Description of the outcome of the presentation of the accepted contribution, in terms of grantee's visibility, including the establishment of new contacts for future collaborations.

The presentation of my accepted contribution at the Carbon 2025 conference significantly enhanced my visibility within the international carbon materials community. My talk, titled "Local Environments and Phonon Spectra in Twisted Bilayer Graphene: A Machine-Learning Perspective," attracted considerable attention from theorists working on graphene and related 2D materials.

During the conference, I had the opportunity to engage in detailed discussions with several researchers interested in applying machine-learning approaches to local environment characterization in layered materials.

[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.

Additionally, the conference allowed me to showcase the ongoing work at my home institution, Istanbul Ticaret University, and within the Nanospace network, further increasing the visibility of our computational approaches to the study of 2D materials.

Following the conference, I visited the research group of Prof. Dr. Chris Ewels at CNRS-IMN, Nantes, France, where I delivered a seminar on the same topic. This visit provided an excellent opportunity to deepen scientific discussions with Prof. Dr. Chris Ewels and his team, focusing on potential collaborations on 2D materials using machine-learning-assisted approaches. The visit led to concrete plans to co-develop computational tools for mapping local environments in 3D materials, which will be further developed in the coming months.

Overall, the participation in the Carbon 2025 conference and the CNRS-IMN visit enabled me to increase the visibility of my research within the international community, establish new professional connections for future collaborations, and open concrete pathways for joint publications and research activities within the Nanospace network and beyond.

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 or poster) of the grantee.

- copy of the given presentation (oral or poster).