

VIRTUAL MOBILITY (VM) GRANT REPORT

This report is submitted by the VM grantee to VNS Manager, who will coordinate the approval on behalf of the Action MC.

Action number: CA16107

VM grant title: Antibacterial application of nanoparticles in the crop production

VM grant start and end date: 23/08/2021 to 07/09/2021

Grantee name: Tamás Kovács

Description of the outcomes and achieved outputs (including any specific Action objective and deliverables, or publications resulting from the Virtual Mobility).

The main objective of this VM Grant was the organization of a special issue in the high-quality MDPI Nanomaterials journal dealing with the antibacterial effects of nanomaterials against plant-associated (phytopathogenic or frequently through infected plant transmitted bacteria). A further aim was to create a link with the COST Action CA16110: Control of Human Pathogenic Micro-organisms in Plant Production Systems.

A committee of five members, including further four scientists from EuroXanth participants (Dr. Ralf Koebnik, Prof. Emilio Stefani, Dr. Katarina Gasic, and Prof. Miroslav Baranek) was organized, all of which will be members of the future editorial board of the planned special issue. To reach the other goal, i.e., to establish a link with the COST Action 16110, I contacted Prof. Overbeek, the Action Chair, asking for cooperation in coediting the special issue. Unfortunately, no participant of this COST Action with research activities connected to nanoparticles could be identified.

The committee members had an online meeting on the 1st of September, and we agreed on the title of the special issue, which will be "Nanoparticles: their synthesis and application to control plant-associated bacteria."

We also agreed on the following tasks and timeline.

- Preparation of a short informative description of the planned special issue, containing its title, a small summary of its planned content, and some bullet points on its aims. Deadline: 02.09.2021
- A Google document table will be created, where participants will collect the data of candidate contributors and the planned manuscripts. Deadline: 12th September 2021.
- A new online meeting is planned for 15th September 2021, where the candidate contributors will be discussed.
- The most promising and suitable candidates will then be approached with the short description, as prepared by Tamas, and asked about their intention to submit manuscripts to this special issue (deadline 30th September 2021).
- Based on the feedback and our own intentions, eight possible contributions will be submitted to the MDPI Nanomaterials when the proposal is sent (no later than 7th October 2021).

- After the online application is sent, on the same day, also the chief editor of MDPI Nanomaterials will be contacted and informed that this Special Issue will be edited by the members of the committee.

This timeline has been modified, as described next. The short informative description was sent on the 2nd September 2021, and the Google sheets was created on the 5th September. Committee members can contact scientists now, sending them the short description and asking for their intention to publish in the upcoming special issue. It is not to exclude that by 15th September, we can discuss at least eight high-level planned manuscripts and contact the journal earlier. I sent the summary for two Hungarian scientists and for the secretary and chair of the Hungarian Association of Microbiologists on 8th September.

The most important objective, i.e., to organize a new special issue, has been met and the journal will be contacted soon. Unfortunately, the involvement of the COST Action CA16110 was not successful, albeit I have contacted the Action Chair.

Description of the benefits to the COST Action Strategy (what and how).

This VM Grant proposal has successfully addressed two of the four Goals of the EuroXanth COST Action, namely

- Goal 1: Exchange of knowledge about the state-of-the art in phytopathology with respect to members of the *Xanthomonadaceae* family, and
- Goal 3: Sharing of technical knowhow, methods and tools.

The most important output of this VM Grant will be that scientific results connected to the topics of the EuroXanth COST Action's Working group 4 will be published in a peer-reviewed, high-impact Open Access journal, thus meeting the aims of Deliverable 12 (Recommendation of disease control measures based on a better understanding of the microbe-eukaryote interaction and the effects of bio-control approaches on pathogen populations).

The VM Grant also considered the three pillars of COST Policy: (i) Geographical spread; (ii) Career stage: involving early-career investigators; (iii) Gender balance. It should be noted that the planned special issue will accept manuscripts from all over the world; however, this has not been reached yet (because the launch of this special issue is expected to be in October). Members of the committee dealing with the launch of the special issue are affiliated in five countries, including three ITCs (Czech Republic, Hungary, Serbia). Concerning the career stage, Dr. Katarina Gasic, a member of the planned editorial board, is a young scientist. The gender ratio of the planned editorial board is one woman to four men; however, it will be more consistent when this value among the authors of manuscripts is measured.

Description of the virtual collaboration (including constructive reflection on activities undertaken, identified successful practices and lessons learned).

I summarized the work performed in the frame of this VM Grant in the 1st point of this report. Other members of the committee have influenced the process at several points constructively. The title, suggested tasks, and deadlines were determined in a cooperative manner. Minutes of our meeting were commented on by the members and modified accordingly. Also, the summarizing description of the planned special issue was modified by committee members to better differentiate phytopathogenic and plant-associated human pathogenic bacteria. A Google sheet for collecting potential contributors and planned manuscripts for the special issue was created and gets edited by committee members collectively. Importantly, the methodology of organization of the potential manuscripts was developed during our virtual meeting. Albeit the aims of the VM Grant remained unchanged, this method to collect potential manuscripts predicts significantly better results in terms of quality of the collected manuscripts than it was planned originally because it includes a broader networking activity.

It should be highlighted that the whole process aiming to launch a special issue in the MDPI Nanomaterials journal was/is being directed by cooperation among the committee members, and outmost part (above 90%) of their reflections have been accepted and involved in the process. I am convinced that this strong cooperation will result in high-quality papers in the special issue in the MDPI Nanomaterials journal.