

## MINUTES of the MB & MC Meeting

**Meeting Date:** 5 October 2019

**Location:** Centro Polifunzionale Paradiso of Anacapri, Capri, Italy

### MB Participants:

Partner Acronym:	Country:	Name:
IMECH-BAS	Bulgaria	Rumiana Kotsilkova
CNR (IPCB)	Italy	Marino Lavorgna
UNamur	Belgium	Philippe Lambin
NARRANDO	Italy	Paolo Ciambelli
UniSa	Italy	Patrizia Lamberti
NanoTechLab	Bulgaria	Evgeni Ivanov
SIPT	Georgia	Ekaterina Sanaia
INP-BSU	Belarus	Polina Kuzhir
Sichuan University	China	Hesheng Xia
MackGraphe	Brazil	Anna Fontenelle

## AGENDA

Moderators: Marino Lavorgna and Rumiana Kotsilkova

10h00-10h20	General project status: Review on the deliverables, milestones, secondments, dissemination and management – <i>R. Kotsilkova, Project Coordinator (IMEch-BAS)</i>
10h20–10h40	Exploitation management and Intellectual Property Rights Agreement <i>E. Ivanov, Exploitation Manager (NanoTechLab)</i>
10h40-10h50	Discussion on the Project status and IPR issue
10h50-12h00	Open discussion on key points of Work Packages with WP Leaders and Partners. <i>M. Lavorgna (WP2), C. Silvestre (WP3), P. Lamberti (WPs 4, 5), Ph. Lambin (WP6), E. Ivanov (WP7), R. Kotsilkova (WPs 1, 8, 9) and All participants</i>  Summary information (5 min.) of WP Leaders on implementation, forthcoming deliverables, milestones and identified risks. Discussion with all participants on.
12h00-12h15	<i>Coffee break</i>
12:15 – 12:40	Draft MoU on setting up Graphene/Polymer Joint Research Laboratory for long-term collaboration after the project end (Deliverable D8.5 and Milestone MS4) <i>R. Kotsilkova (IMEch-BAS)</i>



12h40-12h50	Organization of the Final Workshop on Graphene 3D project at SIPT, in Tbilisi, Georgia. <i>E. Sanaia (SIPT)</i>
12h50-12h55	Announcements: New Special Issue of Nanomaterials (Open access), <i>G. Spinelli (UniSa)</i>
12h55-13h10	Additional Topics: - Financial Report on the Training school in Salerno, 30 May 2019, <i>P. Lamberti (UniSa)</i> - Changes of the responsible persons proposed from the CNR partner, <i>R. Kotsilkova from the name of C. Silvestre (CNR)</i>
13h10-13h15	Debriefing and closing
13h10-14h30	Lunch

## MINUTES

At the start of the MB meeting, the Coordinator has proposed two additional topics in the Agenda, as follows:

- (i) Financial report for the Training school in Salerno, May 2019; and
- (ii) Some changes of the responsible persons from CNR in the project consortium.

MB members agreed to add the two new topics in the Agenda.

The first part of the MB meeting was dedicated to research achievements of the Graphene 3D project.

**1) General project status** at month 33 was presented by the Coordinator, R. Kotsilkova (IMech-BAS). She has informed that the planned 10 deliverable reports and 1 milestone for the reporting period were submitted in time. The Work Program is implemented successfully and no deviations from the Annex 1 are observed. The consortium has done enough work for the preparation to the forthcoming 2 deliverable reports and the Milestone MS2 will be achieved to the end of this year. Coordinator has discussed how to organize the work in the final project year 2020, related to the planned 7 deliverable reports and 2 milestones. The implementation of secondments has to be forced in order to be in line with the planned one. The project research work was properly disseminated in 48 papers in impact factor journals and 22 conference communications. The KPIs are achieved for the reporting period.

Marino Lavorgna (CNR) has proposed the properties tested by standard methods to be included in the forthcoming Deliverable report D4.1. "Data Sheet of maximum improved nanocomposite mechanical, thermal, electrical and electromagnetic properties".

Hesheng Xia (Sichuan University) has mentioned that not all materials properties can be tested by standard methods, therefore some basic information for the test conditions has to be also included in the D4.2 report.

**2) Open discussion on the Work Program.** The leaders of the Work Packages have presented briefly the main scientific achievements of their WPs and the forthcoming work that has to be done. For the WP2 and WP3, Dr. M. Lavorgna (CNR) has stressed on the innovation

related to the production of novel nanocomposite materials, based on TPU, PLA, HAVOH, HDPE and PDMS polymers with graphene and carbon nanotubes, having competitive properties for 3D printing application, both FDM and SLS technologies. The WP2 will be completed, as planned, at month 36 and the WP3 – at month 40.

Dr. P. Lamberti (UniSa) has presented the WP4, dedicated to properties characterization, as well as the robust design tool developed in WP5. Obtained results in WP4 will be used in WP5 for selecting the nanocomposite formulations in respect to optimal electrical, thermal and electromagnetic properties.

Prof. Ph. Lambin (UNamur) has demonstrated for WP6, the new models of porous structures, optimized in respect to maximal thermal conductivity. To the end of this year, models combining maximum thermal conductivity and electromagnetic shielding efficiency will be developed by UNamur and INP-BSU.

Prof. E. Ivanov (NanoTechLab) has informed for the WP7, that NanoTechLab has started to print dense structures that will be compared later on with the porous structures in respect to thermal and electromagnetic properties. The 3D printed structures will be validated as laboratory prototypes.

**3) The Exploitation plan** was presented by the exploitation manager E. Ivanov (NanoTechLab). He put on the discussion the patentability of the obtained innovative nanocomposite materials, in line with Annex 1. The discussion has started with the patent problems.

M. Lavorgna (CNR) has informed that almost all results, related to the novel nanocomposite materials, developed in WP2 are published by the project partners, which strongly limited the possibility for patenting. He suggested another option to patent a Model of the 3D printed structure, made from a novel nanocomposite material, dedicated for specific applications. He proposed to share the experience of the Italian patent procedure.

P. Ciambelli (NARRANDO) said that it is difficult to patent anything that is even only mentioned in some publication. We have to know how to write a patent and what type of patent to choose, a national or European. Therefore, it is better to look for a patent office or company, which may advise us if our idea is patentable and they may write the patent.

The price of an EU patent and the expenses for writing a patent by external company were discussed. R. Kotsilkova proposed that the rest of the centralized budget of about 10000 EUR to be used to pay a patent if such arise. Ph. Lambin (UNamur) has informed that UNamur might support 1/3 of the patent expenses if the University will take benefit from such a patent.

P. Lamberti said that UniSa usually pay the patent taxes for their researchers for the first 3 years. She mentioned that the patent taxes might be paid also from the management money of our project. R. Kotsilkova (IMEch) confirmed that the rests of around 10000 Euro from the centralized project budget might be used to pay for a joint patent, if such arise and it would be paid proportionally to the participated partners.

The MB has elected a Commission, including E. Ivanov, Ph. Lambin, M. Lavorgna and P. Ciambelli, who will contact appropriate patent office/or external company to evaluate preliminary and free of charge the patent idea, as well as to collect information for the price of the patent writing by an external company. The Commission will inform the MB members for the results of this search at a Skype meeting, organized by the Exploitation manager in January 2020.

Meantime, the consortium will work on preparation, testing and validation of the innovative 3D printed structures in order to decide if they are enough innovative and patentable.

The Exploitation manager, E. Ivanov (NanoTechLab) has presented to the MB members the draft Intellectual Property Ownership Agreement (IPO) that concerns the IPR issue during the life of the project and 5 years after the project end. A discussion was opened. Prof. Ph. Lambin stressed on the importance to decide in the agreement for the % Profit for participating partners. Prof. H. Xia (Sichuan University) has proposed not to separate the Beneficiaries and the TC partners in the IPO, but to prepare a common list of all partners that will sign this agreement. Partners agree to contact their IPR offices in order to check and harmonize this Agreement with their national law. The deadline for sending comments of this document is 1 month.

The Exploitation manager will collect all comments and corrections and will prepare the final version for further discussion. The Intellectual Property Ownership Agreement will be signed by all Beneficiaries and TC partners in 2020, and will be presented, as a part of the Deliverable Report on the Exploitation of Results and IPR (D 8.4 at month 47).

During the second part of the MB meeting:

**4) Memorandum of Understanding.** R. Kotsilkova has presented the draft Memorandum of Understanding (MoU) for setting up the Graphene-Polymer Joint Research Laboratory (JRL) for collaboration beyond the funding period of the Graphene 3D project. This is included in the forthcoming Deliverable report D 8.5 and the Milestone MS4 at the project months 45 and 47, respectively. The proposed JRL objectives are to organize more partners together and to facilitate the submission of novel EU and bilateral projects. The JRL structure is proposed to be organized as a Virtual Network, opened for many new partners. The JRL will be managed by the Management Board, which elect the Coordinator.

The following partners took part in the discussion:

P. Kushir (INP–BSU) proposed 3 years duration for the JRL, as such a period is enough to confirm the reliability of this idea. She proposed the participation fee to be paid now for the 3 years period, using the Institutional costs of the Graphene 3D project.

P. Lamberti (UniSa) asked who would sign the MoU. R. Kotsilkova proposed the MoU to be signed preferably by the group leaders, or if necessary by the Directors of the Institutions.

M. Lavorgna (CNR) has discussed for what will be used the collected annual fee of 200 EUR from partners and 300 EUR from companies– e.g. for organization of meetings, creation of website, etc.

H. Xia (Sichuan University) proposed the participation fee for the companies to be double higher. Moreover, he proposed the term “3D printing” to be included in the title of the JRL.

P. Ciambelli (NARRANDO) asked what are the objectives of the JRL? To act as a “club of friends” for preparation of project proposals, or something more. He proposed to register the JRL as an official body on EU level in order to become official EU referee adviser. He will ask EU officials how to proceed in order to realize this idea for the JRL.

M. Lavorgna (UniSa) proposed to organize the JRL as a “Platform for New Materials for 3D printing application”. However, in order to realize such an idea, we have to attract large number of participants at the starting point. R. Kotsilkova has mentioned that we may use as an example the EuMat Platform.

R. Kotsilkova proposed two steps in realization of the JRL. First, to elaborate the final MoU in respect to the forthcoming Deliverable report D 8.5 (M45) and the Milestone MS4 (M47). After construction of the JRL, the JRL Management Board and the Coordinator will proceed with the next step to register the JRL as an official body on EU level (if it is possible), or as a Platform.

The project Coordinator, R. Kotsilkova will collect the comments and corrections from partners and will send the second draft of MoU for discussion, in January 2020. A Skype meeting on MoU will be organized in the early 2020.

**5) Organization of the Final Workshop in 2020.** E. Sanaia (SIPT) has presented the activities for organization of the Final Workshop on Graphene 3D project at SIPT, in Tbilisi, Georgia. The meeting is planned for 40-45 participants coming from project partners, SIPT host researchers and few external speakers. For the meeting location a new hotel environment was proposed, having a conference room and hotel rooms for participants at the same place. The possible meeting expenses are expected to be below 20000 EUR. The meeting was fixed for 23-25 September 2020, including a half day for the final MB meeting. The program will be organized several months before the Final Workshop.

**6) A New Special Issue of Nanomaterials** (an Open access journal), dedicated to 3D printing materials, was announced by the guest editor G. Spinelli (UniSa). He has invited partners to submit joint papers with results from our Graphene 3D project. The production fee will be reduced with 20% for several invited papers. The deadline is August 2020.

**7) The Report on the Training school in Salerno**, 30 May 2019, including the financial expenses were presented by P. Lamberti (UniSa). The Training school had significant effect for the improving knowledge of the ESRs from all project partners on the experimental testing methodologies and equipment. A rest of 3989 EUR from the Training school budget was reported. Partners agree those money to be used to support fully or totally several publications, submitted by project partners to the upper discussed Special Issue of Nanomaterials (Open access), edited by G. Spinelli (UniSa).

**8) Changes of the responsible persons from CNR in the project consortium.** The Coordinator, R. Kotsilkova (IMech) has presented the CNR proposal for two new representatives in the consortium, as follows: Giovanna Buonocore was proposed as the WP3 Leader and Maria Gelli – as the Secondment Manager, to replace Dr. Clara Silvestre. The MB members have accepted the changes and invited Dr. C. Silvestre to keep her nomination as the MB Member from CNR.

#### **Decisions from the MB meeting:**

1. MB has elected a Commission of E. Ivanov, Ph. Lambin, M. Lavorgna and P. Ciambelli, to contact an external company for free evaluation of the patent idea, as well as to collect information for the price of the patent writing. The Commission will inform the MB members for the results at a Skype meeting, organized by the Exploitation manager in January 2020.



2. The project Coordinator will collect the comments and corrections of partners related to the structure and objectives of the JRL (a Platform, or any other registration). Based on the proposals of partners, the second draft of MoU will be prepared in January 2020. A Skype meeting on MoU will be organized in the early 2020.
3. The rests of 3 898 EUR from the Training school budget to be used for full or partial support of several joint papers submitted to the Special issue of Nanomaterials, edited by Dr. G. Spinelli.
4. The Final Workshop was fixed for 23-25 Sept 2020, in Tbilisi. The host organizer will be SIPT.
5. The next MB meeting will be held on 25 or 26 Sept 2020, within the Final Workshop.

After completion of the Agenda, the MB meeting was closed by the project Coordinator, R. Kotsilkova, with acknowledgements to the participants, as well as to the organizers Marino Lavorgna (CNR) and Giovanna Buonocore (CNR).