Minutes of the 2nd Management Committee Meeting of the COST Action

CA18202 - Network for Equilibria and Chemical Thermodynamics Advanced Research

Rectorate of Belgrade University, Kapetan Mišino zdanje
Studentski trg 1, Belgrade, Serbia, 6th March 2020

ACTION Status at the MC2

- Action parties: 24 COST countries
- CSO approval: 04/06/2019
- Start date: 02/10/2019

i. Agenda and Materials

The MC meeting agenda is in Annex 1. The MC meeting was organised following a participatory methodology and in the framework of a joint MC/CG/WG/Conference 2-days meeting, as established during MC1 meeting, called 1st European NECTAR Conference, held in Belgrade (RS) on March 5th and 6th, 2020 (3rd Circular in Annex 2).

ii. Participants and Hosting Team

Slobodan Gadžurić and Tatjana Trtić-Petrović, MC members representatives for Serbia, hosted the meeting. Participants are listed in Annex 3.

iii. Pre-requisites for the Decision Making

During the day, the participants acknowledged and agreed to comply with the Rules of Procedure for the MC from Annex I COST Action Management, Monitoring and Final Assessment (COST 134/14: *http://www.cost.eu/download/COST_Action_Management_Monitoring_and_Final_Assessment*).

Before any decision was taken, the Action Chair (AC) verified that the minimum of 2/3 of the parties present, the necessary quorum was achieved allowing the MC meeting to officially take place in accordance with Article 9 of the Rules of Procedure for the MC (see *http://www.cost.eu/download/COST_Action_Management_Monitoring_and_Final_Assessment*).

1) Welcome to Participants

The hosting team and the AC (Demetrio Milea) welcomed the participants (list in Annex 3).

2) Verification of the presence of two-thirds of the Participating COST Countries or, if applicable, a quorum

According to Pre-requisites of point iii., 24 Member Countries (and 2 MC Observers from NNC) are parties of the Action. Quorum is represented by 16 Members

Parties present were: Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Hungary, Iceland, Italy, Lithuania, North Macedonia, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Switzerland, Turkey, for a total of 20 members

Parties absent were: Belgium, Ireland, Malta, Moldova (4 members), as well as the 2 MC Observers from Ukraine.

AC announced that quorum was reached and declared that MC Meeting could officially take place and that all votes and decisions taken were valid.

3) Adoption of Agenda

AC readed the Agenda, previously sent by email to all MC Members.

AC launched the vote for the Adoption of Agenda.

Agenda was unanimously adopted.

4) Approval of minutes and matters rising of last meeting

AC remembered participants that last meeting minutes were approved by e-vote launched on October 15th, 2019 (13 days after the meeting took pace).

Any matter was bringed to discussing by any of the participants.

5) Update from the Action Chair

a. Status of the Action

AC informed participants about:

- Action start, end and Grant Periods (GPs): Action started on Oct 2nd, 2019 and will end on Oct 1st, 2023, divided in 5 Grant Periods (GP1: Oct 2nd 2019 – April 30th 2020; GP2: May 1st 2020 – April 30th 2021; GP3: May 1st 2021 – April 30th 2022; GP4: May 1st 2022 – April 30th 2023; GP5: May 1st 2023 – Oct 1st 2023).
- Participating members: Action grew in therms of new participants since the beging of the Action (24 COST countries + 2NNC members at the date of this meeting *vs* the 20 members registered in occasion of MC1).
- It was agreed that all MC members should have a more active role contacting and inviting people working in the topic of NECTAR from Member Countries still not present in the Action, aiming at the expansion of the network.

b. Short Term Scientific Missions (STSM): review of completed reports and new applications

- AC informed participants that during actual GP1, one call for 4 STSMs was launched on Nov 30th, 2019, with a total budget of € 5200.00 (Details in Action Call, Annex 4 and in STSM Coordinator presentation, Annex 5).
- 5 applications were submitted, 4 from ECIs / students and 1 from permanent staff.
- Awarded people were: Dong Han (ES), Silvia Gentili (IT), Viktorie Siruckova (CZ), and Yuliya Toporivska (PL).
- No report was available to review since STSTs were just ended or should still end.
- A summary of the last STSM call and further guidelines for future ones was presented (Annex 5)

6) Update from the Grant Holder

The MC was informed that, due to some financial and logistical issues, none of the budget allocated for GP1 was used at the moment of the MC meeting.

The reasons were appointed:

- STSM just or not yet finished
- Planned MC/CG/WG/Conference meeting running.
- Webpage not finished yet.
- 1st installment not sufficient for scheduled payments and 2nd not yet sent by COST Association.

7) Update from the COST Association

SO could not attend to meeting.

AC gave info on:

- The main features of the COST programme and the COST Excellence and Inclusiveness Policy.

- The COST Actions, participation in COST Actions, the networking tools and the financial rules for their implementation and the COST Grant System.
- The rules for the reimbursement of expenses for attending meetings and/or give training in training schools.
- The tasks for managing the Action.

8) Monitoring of the Action

A short summary on the aims, research coordination objectives and capacity building objectives described on NECTAR´s MoU was presented.

The Action goals for GP1 were discussed:

- Promote and advertise Action and Action´s aims: well achieved during GP1.
- Consolidate (and expand) the existing Network: well achieved during GP1 (4 new COST countries and 2 NNC members)
- Identify and involve new stakeholders: one new SME joining the Action – more effort from all members to a better accomplishment in the near future (GP2)
- Getting first results from WGs activities: not all activities of WGs were concluded due to the short period (more details in Section 10).
- Start the training of the “Thermodynamic Minds”: this started to be considered on the STSM but must be fully developed along the whole Action period.

9) Implementation of COST policies on:

a. Promotion of gender balance and Early Career Investigators (ECI)

b. Inclusiveness and Excellence

These two topics were discussed together.

The ITC Coordinator (Emel Yildiz, TR) and the Equal Opportunities Manager (Eva Anna Enyedy, HU) presented to the MC an overview of the Action in terms of gender balance, ECI and Inclusiveness and Excellence (Annexes 6 and 7). From the data collected, the MC concluded that Action is very well balanced in terms of all this topics. Nevertheless, MC decided to further boost the involvement of more ECI in the Action leading positions.

Due to the absence of IT Manager (Oreste Todini, BE), AC informed participants about the recent involvement of two SMEs in the Action, both mainly interested in smart synthesis, characterization and analysis of fine chemicals.

AC warned participants about the need of establishing new partnerships with software developers and instruments manufacturers, in particular in relation to the improvement of instrumental data collection and analysis and coupling/handling different instrumental techniques.

10) Follow-up of MoU objectives: progress report of working groups

During the Conference, WGs had their meetings, followed by a joint meeting / round table to discuss common issues, and a CG Meeting. The progress of the tasks and deliverables defined on the last MC for GP1 were discussed, as well as those for the upcoming GP2. The results obtained from those discussions were used as input for the draft proposal for the Work and Budget Plan for the upcoming GP2 (Section 11). Main topics are summarized as follows:

WG1: NECTAR for highly hydrolysable (HHC) and/or low-valence state (LVC) cations.

WG1 Leader: Montserrat Filella (CH)

WG1 co-Leader: Olga Iranzo (FR), absent.

Planned WG Tasks for first 12-18 months of the Action

1) We need to have the first meeting as soon as possible. In the first meeting, we need to create the two teams and each team needs to discuss the tasks and deliverables above and distribute the work to be done for tasks 1, 2 and 3.

2) We need to create a collaborative system that simplifies the exchange of information and the achievement of the tasks. This needs to be created as soon as possible.

3) We need to identify other actors in the field. Many people in the geochemical, radwaste and environmental fields deal all the time with prone-to-hydrolysis metals. In particular, the radwaste community, works continuously with these elements. A significant part of the mining industry too. Our aim is two-fold: (i) incorporate some of them to the WG; (ii) identify and understand the needs of stakeholders concerning these elements.

Activities during GP1, to present time:

1- The first task has been accomplished. Instead of two sub-WGs, we have decided to leave aside for the moment the low-valence elements and we will partially integrate these elements in the hydrolysable elements work. The team has been created in Belgrade. Members: Beccia, Bura-Nakić, Filella, Galceran, Gama, Gumienna-Kontecka, Knežević, Lubal, Meyer, Milea, Savastano, Sladkov, Vargová. WG agrees that other team members can join, provided that they give ACTIVE contribution to WG activities.

2- The collaborative work tool has been created in collaboration with WG5 (NECTAR Platform on Notion.so).

3- Efforts have been made with poor results for the moment. They will continue in the immediate future. Participation in the IUPAC ISSP19 meeting to be held in Albuquerque, US next July is considered a key strategic point (see Work planned section).

Work and Tasks planned for GP2:

WG1 will work in the compilation and critical assessment of hydrolysis constants for the elements listed below, including solubility products. The work will be developed by small groups as detailed:

- Fe (also asked by WG2) and Al: Gama, Milea
- Ga: Gumienna-Kontecka, Lubal, Vargová, (Filella), (Galceran)
- In: Galceran, Lubal, Vargová, (Filella)
- Nb, Ta, Te (published, just updating): Filella
- Sn(II) (published, just updating): Milea
- U: Beccia, Lubal, Sladkov,
- V: Bura-Nakić, Knežević
- Zr (also asked by WG2): Gumienna-Kontecka, Meyer, Savastano, Sladkov

WG1 leader will send periodic updates of the situation as well as help by disseminating inside the group the necessary tools. Depending on work progress, the next step will be to spend half a day putting experiences in common either personally or through skype (or similar). Later, we will decide if we need to invite one or two scientists involved in this type of exercises to discuss practical issues.

This initial step of data compilation will include a transversal exercise of extraction of methods used (link with WG4) as well as the collection, when possible, of original titration data.

Work planned fulfil points 1 to 4 of the tasks and deliverables of this Working Group as stated in the MoU.

WG2: NECTAR for strong and/or multifunctional ligands, macromolecules, polyelectrolytes.

WG2 Leader: Petr Hermann (CZ)

WG2 co-Leader: Maria Amelia Santos (PT), absent.

Planned WG Tasks for first 12-18 months of the Action

During the 1st MC meeting, it was agreed that tasks in MoU are still valid, as given below:

1) Thermodynamic and kinetic data of complexes with potential medicinal and environmental applications.

2) New data on metallophores/siderophores and on their interaction with high-valent metal ions

3) Review/critical evaluation of data and methods/techniques used for equilibrium and kinetic studies of multifunctional ligands

4) Determination of metal-binding sites in multidentate ligands, as peptides or proteins.

5) Development of guidelines for determination of equilibrium constants in “problematic” systems.

During the discussion, it was said that it would be hard to get very conclusive data for any family of ligands during the first 12 months. WG2 should then focus on collaborative effort to define “good laboratory practice” for determination of reliable equilibrium data.

Activities during GP1, to present time:

WG2 is the largest NECTAR WG with many different topic(s) and goal(s) to be considered, as already evidenced from the analysis of tasks planned during 1st MC meeting. In this light, tasks were prioritised and a new WG2 organisation was defined:

According to the research topics, works of WG2 was partially divided into several “Task Groups (TGs)”. The TGs work more closely and define their own topics according to specific requirements of equilibria investigations in their area of research within NECTAR.

There are three newly established WG2-TGs.

(*i*) WG2-TG1 (coordinator: P. Hermann, Prague): Macrocycles and complexones. Current participants: P. Hermann and V. Kubíček (Prague), A. Bianchi (Florence), E. García-España (Valencia), S. Leibsch (Chemnitz), P. Lubal (Brno), L. Giorgi and M. Formica (Urbino), M.A. Santos (Lisboa), C. Sgarlata (Catania).

(*ii*) WG2-TG2 (coordinator: T. Biver, Pisa): DNA/RNA interactions. Current participants: T. Biver (Pisa), G. Barone and A. Terenzi (Palermo), B. Garcia, N. Busto and J. M. Leal Villalba (Burgos), I. Cavaco (Algarve), E. A. Enyedy and O. Dömötör (Szeged), E. García-España and J. González (Valencia), J. Hamáček (Orleáns), I. Łakomska (Toruń), S. Aydinoglu (Adana), J. Masternak (Kielce), I. Turel (Ljubljana), A. Domínguez-Martín (Granada).

(*iii*) WG2-TG3 (coordinator: K. Várnagy, Debrecen): Complexes of peptide-like ligands. Current participants: K. Várnagy (Debrecen), E. Gumienna-Kontecka and M. Ostrowska (Wroclaw), O. Iranzo (Marseille), M. Tegoni (Parma), M. Remelli (Ferrara).

Participation in the WG2-TGs is fully open to any research lab within NECTAR and the TGs will collaborate with other scientific groups both inside and outside of NECTAR whenever it will be necessary. It will be a basis for collaborations between the NECTAR WGs.

Work and Tasks planned for GP2:

1. Task of WG2-TG1: Suggestion of suitable polydentate ligand-metal ion system(s) showing problems with determination of data in low/high pH regions and high stability constants, and/or problems with kinetics (slow equilibration). Development and testing of recommended procedure for the system(s).

2. Task of WG2-TG2: WG2-TG2 will identify a target system for studies on biosubstrates binding, to be used as validation standard; first, on dye/DNA intercalation. A target ("golden standard") system will be chosen on the basis of reactants stability and cost, availability and ease of handling. The different research groups will perform tests on the evaluation of binding constants for the target system. Results will be checked to perform inter-calibration exercises between laboratories. The aim is the development and testing of recommended procedure for the system(s).

3. Task of WG2-TG3: WG2-TG3 will focus on (oligo)peptide-metal equilibria and on standardization of potentiometric studies of the systems. The plans involve collection of methodologies/parameter set used for determination of protonation and stability constants of the simplest oligopeptides (e.g. Gly-n , Ala-n, n = 3 or 4) and their comparison with those currently used by the different research groups. Based on these data, the research groups will determine and test optimal conditions for the equilibrium characterization of the aforementioned oligopeptide-metal ion systems.

4. To establish one or two other Task Groups to deal with other systems (as defined in MoU), e.g. siderophores/metallophores and other strong chelants.

5. To start work on newly identified problems and prepare preliminary data for the next stages of the NECTAR Project. The problems to deal with were identified as: (*i*) methdology for determination of constants characterizing weak intractions of components involved in the equilibria and (*ii*) methodlogy for investigations of equilibria in non-aqueous solvents. This will be done in collaboration with WG3 and WG4.

6. Collaboration with WG1 on hydrolyzable metal ions; WG1 results will be used in systems studied by WG2.

7. Development and testing of three "standard" procedures to obtain equilibrium data for particular systems as defined above. The procedures will be designed to be used by a general chemical community to test their methodology for determination of equilibrium constants.

8. In the next WG2 meeting the works on the above procedures will be discussed. There is necessary to establish more TGs to fully cover topics originally planned for WG2.

9. Continuation of works on multidentate ligands/systems with biological and/or medicinal applications.

10. Continuation of works on multidetate ligands/systems of industrial and/or enviromental interest. Collaboration with industrial partners wherever possible.

11. Collaboration with other WGs: (*i*) With WG1 on highly hydrolyzable metal ions as results of WG1 will be used in WG2 equilibrium studies. (*ii*) With WG3 on methodology for works in non-aqueous solvents. (*iii*) With WG4 on development of software tools for microcalorimetric data.

12. WG3 meeting is planned within ISMEC meeting in Valencia.

The planned works fullfil tasks originally planed in MoU and re-defined in the kick-off NECTAR meeting (Tasks and Deliverables, Points 1–5).

WG3: NECTAR for multicomponent solutions and complex matrices.

WG3 Leader: Slobodan Gadzuric (RS)

WG3 co-Leader: Arunas Ramanavicius (LT)

Planned WG Tasks for Months 12–18 of the Action

1. Study of:
    - supramolecular metal-based systems for sensing and biomedical applications;
    - interactions in multicomponent systems (colloidal systems, biological fluids, task-specific ionic liquids and other non-aqueous systems with possible application in medicine and environmental protection)
    - thermodynamics of nano-systems
2. Critical evaluation and prediction of thermodynamic parameters using advanced computational methods and experimental validation;
3. Improvement of methods and determination of equilibrium constants and thermodynamic parameters in multicomponent homogeneous and heterogeneous systems;
4. Create a collaborative system that simplifies the exchange of information and the achievement of the tasks.

Activities during GP1, to present time:

1. Organization of WG3 and collaboration with other WGs was defined.

2. During the first NECTAR meeting in Belgrade the team has been partially created, since many cancelations occurred due to a pandemia of coronavirus.

3. The collaborative work tool has been created in collaboration with WG5 (NECTAR Platform)

4. Efforts have been made with poor results for the moment. They will continue in the immediate future. Participation in the IUPAC and EUCHEM conferences in 2020 is considered a key strategic point.

Work and Tasks planned for GP2:

1. Investigation of multicomponent systems including various ion-ion and ion-solvent interactions that had been neglected in different biological model fluids such as saliva and plasma.

2. Study of the ternary systems (ligand-ligand and metal-metal exchange).

3. Include investigation of the other important thermodynamic parameters and volumetric properties in mixed solvents and ionic liquids that might be important for their further applications.

4. Investigation of the non-covalent interactions in multicomponent systems.

5. Collaboration with WG2 dealing with metals, ions and complexes in multicomponent systems.

6. WG3 meeting is planned within ISMEC meeting in Valencia.

WG4: NECTAR tools, services and facilities.

WG4 Leader: Aleksandar Cvetkovski (MK)

WG4 co-Leader: Winfried Plass (DE)

Planned WG Tasks for first 12-18 months of the Action

1) Identifying and prioritising the most critical laboratory practices and data analysis procedures for the determination of thermodynamic parameters that need most urgent revision.

2) Identifying the characteristics of both the platform and the database (of thermodynamic parameters) itself.

3) Selecting analytical instruments/techniques for improved and real-time measurements of process parameters that are used for the determination of thermodynamic parameters.

4) Identifying the chemical-physical and structural characteristics that some molecules should have to be successfully employed in some selected fields.

Activities during GP1, to present time:

According to previous objectiesthe following activities have been performed:

1- From WGs discussions it emerged, as a priority, the necessity to review and give guidelines on the correct use of calorimetric techniques and related data analysis.

2- Existing databases were reviewed even according to recent review by Hummel et al., Sci. Tot. Environ., 692, 2019, 49-59(https://doi.org/10.1016/j.scitotenv.2019.07.161).

3- A template file was proposed to share among NECTAR researcher for collecting info related to techniques used for thermdynamic data production and analysis, to be launched on the NECTAR web site platform, thus being available to any researcher having access to deposite the data relating to thermodynamics research methodologies, tools and facilities.

4- Together with other WGs, some systems are being defined as “golden standards” systems to investigate. Moreover, two SME involved in smart syntheses and fine chemicals production joined the Action.

Work and Tasks planned for GP2:

1. Complete the launched template

2. Filling the template up with the proper information (distinguish who researcher what kind of methods use under which condition in which area of research on chemical thermodynamics), in collaboration with other WGs and WG5 in particular

3. Recognizing the gaps in methods, condition and instrumentation for generating thermodynamic data

4. Organizing a TS (According Gant diagram MoU) on thermodynamic data analysis and corret use of experimental techniques for thermodynamic data determination.

5. Identify analytical techniques, instrumentation and software developers to involve in NECTAR

6. Compilation of first data collections and guidelines accordinng to other WGs results.

7. Use of chemometric tools for data analysis and calculation.

WG5: NECTAR for the future: new trends and exploitation of results.

WG5 Leader: Isabel Cavaco (PT)

WG5 co-Leader: Natalia Busto (ES), absent.

Planned WG Tasks for first 12-18 months of the Action:

1) Setting up the project website, by December 2019. Also create dedicated accounts in Facebook, Twitter, LinkedIn and Instagram, and probably a discussion topic in Reddit and/or Quora. Creating a mailing list for internal communication.

2) Organizing 2/3 meetings.

3) Identify main concerns to be covered in "Good Practices on the Determination, Analysis and Use of Thermodynamic Data". Collect insights from participants on what are the important topics to be covered and define structure and type of publication(s).

4) Prepare flyers to be distributed in conferences - by February 2020.

5) Define the project Logo - by November 2019.

6) Preparing an International Conference.

7) Organize an effective system for distribution of information among the action participants.

Activities during GP1, to present time:

1- The Action website, www.cost-nectar.eu, is online. Dedicated accounts were created in social media: Facebook (https://www.facebook.com/Nectar-COST-Action-18202-108076707345530/), Twitter (https://twitter.com/CostNectar), Linkedin (https://www.linkedin.com/groups/12373880/), Instagram (https://www.instagram.com/costnectar/), and Youtube (https://www.youtube.com/channel/UC_RNffViQG5-o8oyjnGTegQ?view_as=subscriber). All are accessible though social media buttons in the main webpage. Dedicated email addresses were created: info@cost-nectar.eu; chair@cost-nectar.eu to facilitate access to management members and the use of mailing lists.

2- To compact costs and to facilitate networking, a joint MC/CG/WG/Conference meeting has been organized, also open to participants upon invitation based on abstracts evaluation for oral communications and posters.

3- Insights from participants on what are the important topics to be covered and to define structure and type of publication(s) were collected during 1st NECTAR Conference.

4- Flyers preparation will be finalised during GP2

5- The Action logo was created and is being used in documents, the website and social media.

6- The 1st European NECTAR conference was organized in Belgrade, on March 5th and 6th, 2020.

7- The NECTAR Platform was created on Notion.so.

Work and Tasks planned for GP2:

a) Improoving website, social media and platforms content

b) Creating contents to be published in the cost-nectar website and social media, adequate for the general public, researchers from different fields and policy makers.

c) Promoting more frequent videoconference meetings within WGs

d) Preparing a NECTAR conference broadcasted as online streaming.

e) Promote and/or co-organize international conferences on NECTAR topics.

11) Scientific planning

a. Scientific strategy (MoU objectives, GP Goals, WG tasks and deliverables)

MC confirmed the Short- and Long-term objectives of the MoU, and indicated as GP2 Goals those by single WGs, as above-reported.

b. Action Budget planning

AC informed participants that SO did not yet communicate the Budget for the next GP2, but that it was advised to make estimations on the basis of GP1 budget (doubled, for full year, i.e., ~105-110 k€), though new members joined Action and probably budget so considered could be underestimated.

AC informed participants that, as recommended by SO, all networking tools provided by COST Association should be used.

The following Activities were proposed and voted singularly:

- **1 joint MC/CG/WGs/Conference meeting**
  AC proposed the organization of joint meetings on the basis of the formula adopted for the present one, in order to boost inclusiveness, participation, dissemination and discussion of results, and to allow members from different WGs to participate to as many WG activities as possible at reasonable costs for the Action. MC agreed on realizing a joint MC/CG/WGs/Conference meeting by the end of the next GP, keeping the same format as the present meeting favouring, nevertheless, a larger number of oral presentations with shorter times (10 mins flash talks).
  A detailed discussion and clarification among participants followed AC report.
  AC launched the vote to include the organization of a joint MC/CG/WGs/Conference meeting among the Activities of the Action for the next GP2.
  MC unanimously approved.

- **1 co-organization of ISMEC 2020 Meeting in Valencia, ES**
  AC warned again participants about the recommendation given by the SO to exploit all networking tools provided by COST Association to promote the Action. In this light, AC reported a discussion with SO on this topic, in which AC informed the SO that the International Group for the Thermodynamics of Complexes (the ISMEC Group, www.ismecgroup.org, to which many of the original Action proposers and actual participants belong) organises every year the International Symposium on Metal Complexes, an international conference focused on recent scientific advances in the thermodynamics and the kinetics of complexes in the fields of Analytical, Biomedical, Environmental, Inorganic and Physical Chemistry, which perfectly fits with Action aims and topics (this year's edition,

ISMEC 2020, www.uv.es/ismec2020/, is being organized by the Supramolecular Chemistry Group of the University of Valencia, Spain). The SO, recognizing the matching of ISMEC 2020 topics with those of the Action, acknowledging the potential of ISMEC 2020 as tool for Dissemination and Networking, suggested the co-organization of that meeting as a highly added value for Action itself.
A detailed discussion and clarification among participants followed AC report.
AC launched the vote to include the co-organization of ISMEC 2020 among the Activities of the Action for the next GP2.
MC unanimously approved with the abstention of Switzerland.

- **1 Training School (SOLvE)**
  During the meeting, the TS Coordinator (Enrique García-España) gave a presentation (Annex 8) evidencing the need of organizing at least one TS per GP, in agreement with Action aims and goals. TS Coordinator informed about the intention by some Action participants to organize a TS on the Determination, Analysis and Use of Thermodynamic Data, named "SOLvE – Advances in SOLution Equilibria". Tarita Biver from WG2, one of organisers, presented the school (Annex 9), which will be held at the University of Messina (Italy), because of the many facilities available there for teaching and accommodation (rooms for the lectures, computers' room with 36 individual working stations, accommodation at free/low price, among others), significantly reducing the total cost of the TS. The topics of the school will be the use of different techniques for determination of the speciation and of equilibrium constants. The explored techniques will be potentiometry, UV-Vis spectroscopy, fluorescence, NMR and calorimetry. Each day will be devoted to one technique and it is planned to dedicate the morning to basic conceptual principles while in the afternoon more practical work is programmed dealing not only with experimental procedures but also with data treatment.
  A detailed discussion and clarification among participants followed AC report.
  AC launched the vote to include SOLvE TS among the Activities of the Action for the next GP2.
  MC unanimously approved.

- **12 STSMs**
  AC underlined the importance of training for the Action, highlighting the key role that STSMs, as well as the above-discussed TSs, have within the Action. During meeting, AC gave a presentation (Annex 5) on behalf of STSM Coordinator (Matteo Tegoni, absent) about the state of art of STSMs within the Action and future calls, with particular reference to guidelines and characteristics of STSMs, to the quality of project presented and to the added value of the STSM in relation to Action objectives. AC proposed to double the number of calls and to triplicate the number of STSMs with respect to GP1, with the possibility to increase both numbers on the basis of Action's needs and funding availability.
  A detailed discussion and clarification among participants followed AC report.
  AC launched the vote to include a minimum 12 STSMs, to divide in two or more calls, among the Activities of the Action for the next GP2.
  MC unanimously approved.

- **1 ITC Conference Grant**
  In the light of SO suggestions regarding the need to exploit all networking tools within the Action, AC advised participants about the need to consider ITC Conference Grants. AC underlined the importance of this networking tool especially in relation to the promotion of the Action to a wider audience, granting ITC students to participate to conferences of proved interest for the Action, but that are not usually attended by Action participants.
  A detailed discussion and clarification among participants followed AC report.
  AC launched the vote to include 1 ITC Conference Grant among the Activities of the Action for the next GP2.

MC unanimously approved.

- **COST Action Dissemination**
  AC suggested to address a small percentage of Science Expenditure to Dissemination Activities (flyers, brochures and other dissemination material).
  A detailed discussion and clarification among participants followed.
  AC launched the vote to include Dissemination among the Activities of the Action for the next GP2.
  MC unanimously approved.

- **OERSA (Other Expenses Related to Scientific Activities)**
  AC informed participants about the nature of OERSA, underlying that GH has agreements with bank to reduce costs for bank transfers.
  A detailed discussion and clarification among participants followed.
  AC launched the vote to exclude OERSA for the next GP2.
  MC unanimously approved.

- **FSAC (Financial and Scientific Administration and Coordination)**
  AC clarified to participants the nature of FSAC, remembering that during MC1 it was assigned a percentage of 15% to GH.
  A detailed discussion and clarification among participants followed, in which the intent of confirming that percentage emerged.
  AC launched the vote to confirm the FSAC at 15% of Total Science Expenditure for the next GP2.
  MC unanimously approved.

After voting the Activities for GP2, a tentative assignment of budget to single activities followed.

AC remembered again to participants that SO did not yet communicate the Budget for the next GP2 and, therefore, warned them to consider budget assignment as tentative.

After a detailed discussion and clarification among participants, the following tentative partition has been proposed:

A – COST Networking Tools	**Quantity**	**€**
(1) Meetings	2*	57500
(2) Training Schools	1	12’000
(3) STSMs	12	20'000
(4) COST Action Dissemination		900
(5) ITC Conference Grant	1	1’000
(6) OERSA (Other Expenses Related to Scientific Activities)		0
B – TOTAL SCIENCE EXPENDITURE (sum of (1) to (6))		**91’400**
C – FSAC (Financial and Scientific Administration and Coordination 15% of B)	**15%**	**13’700**
D – TOTAL GRANT (B+C)		**105’200**

As soon as budget will be communicated by SO, the effective partition among approved activities will be done and voted.

c. Long term planning (including antecipated locations and dates of future activities)

MC confirmed the long-term aims, tasks and deliverables reported in both the MoU and by WGs. Particular attention will be devoted to strengthen actions in favour of the involvement of enterprises and experts in software development and instrumentation manufacturers, as well as the dissemination and publication of guidelines in relation to good laboratory practice and data handling and publication.

d. Dissemination planning

It was agreed that more attention should be given from now to Social Media and to channels that will allow the Action to reach the Society. Furthermore, warnings and reminders were done in terms of acknowledgment to the Action in all publications and/or presentations of the work done within the scopes of the Action.

12) Requests to join the Action from:

a. COST countries

AC warned participants about the need of extending the network, remembering MC members not yet in Action: Albania, Austria, Bosnia and Herzegovina, Cyprus, Estonia, Finland, Greece, Latvia, Luxembourg, Montenegro, the Netherlands, Norway, Sweden and United Kingdom, plus Israel and South Africa as Cooperating and Partner Members, respectively.

b. Institutions in Near Neighbouring Countries, International Partner Countries, and/or Specific Organisations: EU agencies, European RTD Organisation, International Organisations

AC also highlighted the importance of strengthen and or start new collaborations with other subjects from NNC, IPC and/or Specific Organizations.

In particular, with reference to NNC, AC remembered that, apart Ukraine that is already involved, the NNC are: Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Jordan, Kosovo*, Lebanon, Libya, Morocco, the Palestinian Authority, Russia, Syria and Tunisia.

Besides, AC remembered participants the guidelines already established during MC1 about the requests to join WGs by individuals.

In particular, it was underlined that any WG member, new and old, must be actively involved in WG (and Action) activities, and that this criterium will be also considered thoroughly for the exploitation of Action's Networking Tools and responsibility positions within the Action.

13) AOB

No other point was found to be relevant to be further discussed.

14) Location and date of next meeting

AC suggested to realize the next joint MC/CG/WGs/Conference meeting in the period Feb-March 2021, which is a convenient period to summarize work done during GP and to plan future activities.

AC asked participants to express ther opinion about the format of the present meeting.

MC agreed on keeping the same format of the present meeting, suggesting more and shorter oral presentations (10 to 15 mins max) to give more information about different activities and to boost discussion.

A detailed discussion and clarification among participants followed.

AC launched the vote to make the joint MC/CG/WGs/Conference meeting in the period Feb-March 2021.

MC unanimously approved.

Concerning location, AC underlined the opportunity to host the meeting in an ITC, and remembered participants that in occasion of MC1, two proposals were made, i.e., Belgrade (RS) and Faro (PT), followed by a general discussion about the possibility to consider the "unselected" location as future location for the next one.

In this light, Portugal MC member (Isabel Cavaco), proposed again Faro (PT) as next joint meeting location.

No alternative location was proposed.

Nevertheless, some MC members suggested to give a deadline for submission of further proposals to be then selected by e-vote.

A detailed discussion and clarification among participants followed.

AC launched the vote to consider Apr 30th as deadline for the submission of written proposals for next meeting.

MC unanimously approved.

15) Summary of MC decisions

From the 24 COST countries parties of the Action (on the 6th March 2020), 20 were present and represented by their corresponding MC members. Belgium, Ireland, Malta and Moldova were not present.

The following decisions were taken:

- **Decision 1:** Expansion of the network in terms of COST countries, NNC/IPC institutions and Specific Organisations. Higher focus on SMEs.
- **Decision 2:** Increasing the number of ECI, and more effective involvement in leading positions.
- **Decision 3:** Confirmation of the Short- and Long-term objectives of the MoU, and indication of GP2 Goals as suggested by single WGs.

Networking Activities for GP2:

- **Decision 4:** Organization of a joint MC/CG/WGs/Conference meeting by Feb/Mar 2021
- **Decision 5:** Co-organization of ISMEC 2020.
- **Decision 6:** Organization of the 1st NECTAR TS, SOLvE.
- **Decision 7:** Minimum of 12 STSM in at least two calls.
- **Decision 8:** 1 ITC grant
- **Decision 9:** Percentage of budget to COST Action Dissemination
- **Decision 10:** No budget for OERSA
- **Decision 11:** 15% confirmed as FSAC for GH
- **Decision 12:** Partition and voting of Budget for GP2 as soon as communicated by SO
- **Decision 13:** Deadline for the submission of proposals for next MC/CG/WGs/Conference meeting fixed at Apr 30th, followed by e-Vote.

16) Closing

In conlusion, AC thanked all people present for their active participation to the meeting, acknowledging the excellent work done by the Local Organisers.

Meeting was officially closed.

List of Annexes

- Annex 1 – Agenda
- Annex 2 – 3rd Circular of the 1st European NECTAR Conference
- Annex 3 – List of Participants
- Annex 4 – 1st NECTAR Call for STSMs
- Annex 5 – STSM Coordinator presentation
- Annex 6 – ITC Coordinator presentation
- Annex 7 – EOM presentation
- Annex 8 – TS Coordinator presentation
- Annex 9 – SOLvE TS draft flyer

Minutes prepared by:

- *Action Chair*
- *Action Vice-Chair*

ANNEX 1- AGENDA

COST Action CA18202
Action Title: Network for Equilibria and Chemical Thermodynamics Advanced Research
Agenda
Management Committee Meeting
Rectorate of University of Belgrade, Belgrade, RS
March 6th, 2020

1. Welcome to participants
2. Verification of the presence of two-thirds of the Participating COST Countries or, if applicable, a quorum
3. Adoption of agenda
4. Approval of minutes and matters arising of last meeting
5. Update from the Action Chair
   a) Status of Action: start and end dates of Action, participating COST countries, participating NNC/ IPC institutions and Specific Organisations.
   b) Short Term Scientific Missions (STSM): review of completed reports and new applications
6. Update from the Grant Holder: Action budget status
7. Update from the COST Association, if a representative is present
8. Monitoring of the Action
9. Implementation of COST policies on:
   a) Promotion of gender balance and Early Career Investigators (ECI)
   b) Inclusiveness and Excellence
10. Follow-up of MoU objectives: progress report of working groups
11. Scientific planning
    a) Scientific strategy (MoU objectives, GP Goals, WG tasks and deliverables)
    b) Action Budget Planning
    c) Long-term planning (including anticipated locations and dates of future activities)
    d) Dissemination planning (Publications and outreach activities)
12. Requests to join the Action from:
    a) COST countries
    b) Institutions in Near Neighbouring Countries, International Partner Countries, and/or Specific Organisations: EU agencies, European RTD Organisation, International Organisations
13. AOB
14. Location and date of next meeting
15. Summary of MC decisions
16. Closing