



International Group for the Thermodynamics of Complexes



OPEN CALL

COST Action **CA18202**

NECTAR – Network for Equilibria and Chemical Thermodynamics Advanced Research

and

ISMEC Group – International Group for the Thermodynamics of Complexes

will organize the

3rd ISMEC – NECTAR Training School

on the Determination, Analysis and Use of Thermodynamic Data

SOLvE – Advances in SOLution Equilibria



July 24th – 26th, 2023

ONLINE



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Open Call

This is an open call aimed at recruiting 30 (thirty) students/trainees for the **3rd ISMEC – NECTAR Training School (TS) on the Determination, Analysis and Use of Thermodynamic Data**, called **SOLvE – Advances in SOLution Equilibria**.

SOLvE will be held **online** from July 24th – 26th, 2023.

Of the 30 (thirty) students/trainees, 15 (fifteen) will be recruited and financed by NECTAR COST Action CA18202 (www.cost-nectar.eu, <https://www.cost.eu/actions/CA18202/>), in the terms described in this document.

The main procedures regulations concerning TS for COST Actions are governed by the COST Annotated Rules ([Annotated Rules for COST Actions](#)).

Scopes of SOLvE TS

The well-known computer science motto of “garbage-in garbage-out” perfectly holds also for chemical thermodynamics.

Researchers working in this field need high-quality data to obtain high-quality results. Analogously, any subject dealing with chemical thermodynamics needs high-quality data and models to ensure their robustness for high-quality applications.

SOLvE is a 3 days **online** training school that will help people dealing with solution equilibria in promoting good laboratory practices. Experienced professors will provide focused theoretical background, practical aspects and tips for high-quality experimental data collection and clues for robust data analysis through different models and protocols (ranging from Excel to more specialised software). The main experimental approaches for solution equilibria will be presented and discussed. Applications of each technique to cutting-edge research will be also highlighted.

Two opening lectures will introduce the framework for a correct approach to chemical speciation in solution and multivariate tools. Then, the school will focus on the theoretical background and practical information for the study of solution equilibria by using:

- spectroscopic/spectrometric techniques
- electrochemical techniques
- calorimetric techniques

Practical examples will show how to extract a robust binding constant value from the experiments.

Two plenary lectures will present further points of view on solution equilibria.

Students/trainees will learn how to design and perform accurate experiments by each technique and to correctly analyse obtained data by the most common software and approaches.



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Scopes of NECTAR COST Action

The thermodynamic study of chemical equilibria represents the core of many important branches of chemistry, from coordination and supramolecular chemistry, to chemical speciation, to molecular modelling and drug design. The importance of chemical equilibria, and chemical thermodynamics in general, results from the simple assertion that many properties of elements and compounds depend mainly on their interactions in a given system: the biological activity of an element or molecule, or their environmental impact can be explained by a detailed study of these interactions, whose nature and strength can be evaluated by chemical equilibrium and other thermodynamic studies.

NECTAR combines the expertise of the large community of specialists working in the field of thermodynamic studies of chemical equilibria. The scopes of this Action are to create a network based on the stimulating collaboration between them, to promote knowledge exchange, and to achieve high technological progress. All this will be accomplished through a fruitful collaboration between young researchers and experienced scientists, taking into consideration gender balance and maximal geographical distribution. Innovative and integrated theoretical and experimental approaches will be established and optimized. Overall, the outstanding quality of obtained results will serve as benchmark for next decades, allowing their application in the above-mentioned fields and substantially impacting on life quality of next generations.

For further details and specific objectives, please read the Memorandum of Understanding (MoU) of NECTAR COST Action: <https://www.cost.eu/actions/CA18202/>.

Scopes of ISMEC Group

The International Group for the Thermodynamics of Complexes, the ISMEC Group, is an open group established in early Seventies, in which researchers at all levels freely meet to share info and ideas in the field of the Thermodynamics of Complexes. No subscriptions and/or official documents are needed to join our community: people interested in can simply subscribe through the ISMEC Group website (www.ismecgroup.org).

The main scope of ISMEC Group is to take initiatives and to organize events and activities to promote research, best practices, formation and culture in the field of the Thermodynamics of Complexes at all levels.

Main ISMEC Group achievements have been the unification of various methodologies in the study of the thermodynamics of complexes, the development of different experimental techniques, the setup of suitable computer programs and calculation methods, and the organization of International Congresses and Training Schools as well.



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Purpose of COST TSs

Training Schools aim to facilitate capacity building on a topic relevant to the theme of the respective COST Action through the delivery of intensive training on a new or emerging subject. They can also offer familiarisation with unique equipment or expertise and are typically, although not exclusively, considered to be for the benefit of ECI and PhD students. They are not intended to provide general training.

General eligibility criteria

SOLvE is open to PhD students, Post-docs, researchers and any other stakeholder interested in receiving advanced training in the design, experimental and calculation procedures for the determination of stability constants and other thermodynamic parameters by the most common techniques.

Due to the limited number of slots available, preference will be given to Young Researchers.

Eligibility criteria and guidelines for NECTAR trainees

According to NECTAR MC decisions:

- a maximum of 15 (fifteen) people will be allowed to attend the SOLvE TS as NECTAR Trainees.
- NECTAR trainees will attend SOLvE and will receive TS material free of charge, but they won't receive any kind of reimbursement.

Eligibility criteria as NECTAR trainees:

Trainees shall be engaged in an official research programme as a PhD Student or postdoctoral fellow or can be employed by, or affiliated to, an institution, organisation or legal entity which has within its remit a clear association with performing research, and belongs to a NECTAR COST Action Member Country, or is an approved NECTAR Near Neighbour Country (NNC) Institution or an approved European RTD Organization.

Trainees not eligible to be reimbursed:

1. Trainees from COST Partner Members.
2. Action MC Observers from IPC.
3. Trainees from Approved IO, EU Commission, Bodies, Offices and Agencies.
4. Other Trainees not specifically mentioned as being eligible.

Application Procedure

All applicants must fill, scan and sign the application form (available at: www.cost-nectar.eu and www.ismecgroup.org) and send it by email to solve@cost-nectar.eu together with a signed copy of their CV and a motivation letter, indicating their research interests and, only for NECTAR applicants, the added value of the training for NECTAR, not later than July 7th, 2023.

Application email must have subject: "SOLvE TS Application Form, SURNAME NAME".



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The “Motivation Letter” should contain the following information (max 2000 words):

1. Aim & Motivation - Please explain the scientific and/or other motivation for the participation to the TS and what scientific and/or other outcomes you aim to accomplish with the TS. Please include in this section a brief description of the scientific context into which TS will be an added value for your activities are to be performed (e.g. specific field of study);
2. Proposed contribution to the scientific objectives of the Action (ONLY FOR NECTAR APPLICANTS). Please include how your training will contribute to the plan of one or more WG(s) of the Action.

A CV should be submitted, drafted preferably in Europass format (max. 3 pages). A list of academic publications can be added in separate pages.

Applications assessment and communication of results

The selection of applicants will be performed by a Committee chaired by Prof. Enrique García-España (NECTAR TS Coordinator). The Committee will perform the scientific assessment of the applications considering the SOLvE, ISMEC Group and NECTAR Action scopes and objectives, as well as the impact of the training by the applicants and involved institutions.

General criteria for evaluation of TS proposals are:

- Priority to TS applications of PhD students or Young Researchers;
- Geographical/Institutions distribution;
- Priority to applicants from ITCs;
- Gender balance;
- Motivation;
- Curriculum Vitae (CV).

All applicants will receive a notification of the acceptance of their application not later than July 11th, 2023.

Trainee/Students registration and fees

After the notification of the acceptance, NECTAR trainees will need to formalize their trainee status online on their e-COST account.

All other trainees/students will need to pay the registration fee - 30 (thirty) € - and send a scanned copy of the receipt to solve@cost-nectar.eu, not later than July 19th, 2023.

Registration email must have subject: “**SOLvE TS Registration fee, SURNAME NAME**”.



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All payments must be made in euros (€), by bank transfer to:

INSTITUTO SUPERIOR TECNICO

Bank: BPI

IBAN: PT50 0010 0000 4811 9570 0013 4

BIC/SWIFT: BBPIPTPL

In the payment title please specify: **SOLvE** and provide **surname and first name of the participant** (e.g., SOLvE TS, Smith John) and **institution**.

Bank charges must be covered by the participant.

After the registration email and payment have been received, the secretariat will confirm your Registration by e-mail.

TS Reporting

Within 30 days from the end date of the TS, all the trainees must submit at least three (3) scientific pictures and/or one (1) video showing training or group pictures, directly to solve@cost-nectar.eu and, for NECTAR Trainees, to the Science Communications Manager Prof. Elżbieta Gumienna-Kontecka (elzbieta.gumienna-kontecka@chem.uni.wroc.pl) and to the WG5 leader Dr. Álvaro Martínez Camarena (alvaro.martinez@uv.es).

Deadlines

Relevant dates are as follows:

- **July 7th, 2023:** deadline for submission of TS applications
- **Before July 11th, 2023:** notification of selected trainees/students
- **July 19th, 2023:** deadline for the payment and submission of registration fee.

Contacts

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