



1st Brazilian X-ray Absorption Spectroscopy School (EBARX)

9 to 13 February 2015

Instituto de Física de São Carlos (IFSC)
Universidade de São Paulo (USP) - Campus de São Carlos
Av. Trabalhador São-carlense, 400, Arnold Schmidt
São Carlos - São Paulo - Brasil - CEP 13566-590

Now accepting applications

The 1st Brazilian School of X-ray Absorption Spectroscopy (EBARX, by the acronym in Portuguese) aims to present to the users of the X-ray Absorption Spectroscopy (XAS) technique a complete view from the physical principles, cover fundamental and practical aspects as theory, sample preparation, experiment and data analysis.

A significant part of the school will be dedicated to hands-on guided data analysis using iFEFFIT package. In addition, a demonstration of the program FEFF for theoretical analysis of the XAS spectra, which is currently the most widely used worldwide for obtaining the phase and amplitude functions used while adjusting the EXAFS spectra. Additionally, the XANES simulations with FEFF, will be introduced.

Will be five days reviewing theoretical and practical aspects of XAS. Computers will be available for those participants attending without their own laptops. The target audience is graduate students, postdocs and other scientists who have some experience as users with XAS and want to improve their knowledge. Participants who are new to XAFS will be accepted depending on the number of inscriptions.

Instructors include: [Prof. John Rehr](#) (University of Washington, USA), [Prof. Anatoly Frenkel](#) (Yeshiva University, USA), [Prof. Valmor R. Mastelaro](#) (IFSC-USP-São Carlos), [Prof. Rogério Junqueira Prado](#) (IF-UFMT), [Prof. Gustavo Azevedo](#) (IF-UFRGS), [Dr. Santiago J. A. Figueroa](#) (CNPEM, LNLS, Brazil).

The course is offered free of charge, but will be limited to 40 participants. The selection of candidates will be made by the organize committee. They will take into consideration the academic performance of the candidates (based on CV), their participation in scientific activities, the case expressed by the candidates in the letter that they present for acceptance and recommendations letters made by their Professors (only required for graduate students/posdocs applications). Depending on the availability of financial resources, some selected graduate students may have their travel to São Carlos partially or fully funded. However, the organizers ask that those interested make efforts with its institutions and funding agencies to obtain funds that enable their participation. Participants will be responsible for their own housing and meals.

Please e-mail to valmor@ifsc.usp.br with subject line “2015 - 1st EBARX” for more information and inscription (**inscription will close 25 January 2015**)

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Schedule Outline (subject to modification)

	Monday (09/12)	Tuesday (10/12)	Wednesday (11/12)	Thursday (12/12)	Friday (13/12)
08:00 – 09:45 hs	Introduction and Overview of XAFS, history, examples	Experimental Aspects: the choice of measurement modes, geometry, sample preparation methods	Methods for the study and application in situ / Operando	Introduction to First Principles Calculations	Analysis procedures for EXAFS - Theoretical Standards
10:00 – 11:45 hs	Elemental Theory and interpretation of XANES and EXAFS spectra	Analysis of Basic Procedures for EXAFS	Analysis of Basic Procedures for XANES	Introduction to FEFF	Practical Approach - Fit EXAFS spectra - Theoretical Standards
14:00 – 15:45 hs	Instrumentation for XANES and EXAFS (synchrotron radiation beamlines, detectors, etc.)	XAS data analysis using Athena and Artemis	XANES data analysis using factor analysis	Demo session: Analysis with FEFF 9 program	Practice with FEFF - XANES simulation using FEFF
16:00 – 17:45 hs	Applications in catalysis	Practical Approach Athena and Artemis	Practical Approach XANES Data processing	Practice with FEFF - SS calculation and MS for EXAFS Analysis	Evaluation

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