







ESSNS 2018



EUROPEAN SCHOOL OF SURFACES AND NUCLEAR SCIENCES

Marcoule Institute for Separation Chemistry



Registration dealine: 15th april 2018

Registration fees: 610 euros

(Possibility of funding for CNRS and CEA/DEN attendees)

Email: surfn@cea.fr

Location: Hôtel Club Igesa,

Porquerolles island 83400 Hyères, France



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Public: Ph.D student, post-doc. and researcher in the nuclear field

Understanding the physicochemical mechanisms occurring during the various steps of the nuclear fuel cycle (such as extraction, recycling, vitrification, reprocessing and nuclear waste management) is required to optimize, control and predict the various involved processes. Surfaces and interfaces characterization plays an important role in these processes and the existence of a large number of techniques opens new possibilities but these tools require to be well mastered.

This European School will gather researchers and Ph.D students studying the physicochemical processes occurring at solid and/or liquid surface/interface in the field of nuclear science. The first goal of this school is to initiate students at several key surface/interface characterization techniques through lectures given by invited specialists. These techniques are mainly focused on the analysis of the surfaces morphology, microstructure, local structure and chemical composition. Another objective is to give the opportunity to researchers and students to express their needs regarding their samples characterization, and by discussion with specialists to initiate collaborations.

Theoretical and general lectures Special feature of the hysics and chemistry EMIR network for nuclear samples of Interfaces irradiations I ORFRDISSE M-F. BARTHE (CEMHTI) Synchrotrons Surface irradiation Radioactive beamlines X. DESCHANELS (ICSM) P.L. SOLARI (SOLFIL) Grazing incidence X-ray X-ray and Neutron reflectivity C. DEN AUWER D. REBISCOUL (ICSM) X-ray reflectivity Photoelectron coupled with others Spectroscopy techniques F. MISERQUE (CEA) Local structure S. DOURDAIN (ICSM) and chemical Surface/interface composition infrared spectroscopy C. BOISSIERE and water radiolysis (UPMC) S. LE CAER (CEA) Grazing Incidence X-ray Analysis of nuclear Diffraction materials by SIMS S. Tardif P. BIENVENU (CEA) (INAC/ESRE Morphology Positron Annihilatio physicochemica Spectroscopy And properties of interfaces M-F. BARTHE (CEMHTI B. PRELOT (ICGM) Non linear optical Microstructure Small Angle X-ray technique and ESEM, AFM and image Surface CAMBEDOUZOU treatment for surface G. GASSIN (ICGM) reactivity I ZACHARIF-ALIBRUN

The school will provide several theoretical and general lectures about surface and interfaces, specific courses about characterization techniques including the special feature on nuclear samples analysis. "Flash" oral presentations of 5 min will offer the opportunity to participants to share their results and to discuss with the present scientists community. The planned activities will ensure permanent contact between lecturers and students and will guarantee that all participants stay the whole week together.

R. PODOR (ICSM)