Half Day Short Course

EuroAnalysis
Geneva 2023
27-31 August 2023 Switzerland

M04. Nanopore Technology for the Detection of Biopolymers

Content

Nanopore technology is an emerging tool for the detection of various biopolymers such as DNA and proteins. In this course, we will focus on explaining the principles of nanopore technology and emphasize on how versatile and sensitive nanopores can be for diverse applications, including DNA sequencing and protein fingerprinting. The students will have the opportunity to experiment with biological nanopores on a half-day course.

Lecture (45 min):

1. Introduction of biological nanopores: theory and data analysis
2. Nanopores for DNA and protein sequencing
3. Nanopores sensing and fingerprinting: from small molecules to proteins

Experimental training (2 h):

1. Demo on DNA detection (45-60 min)
2. Practical training (sample brought by the participants or sample given by the lecturer) (45-60 min)

Details

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Instructors	Dr . Chan Cao Dr. Juan Francisco Bada Juarez EPF Lausanne
Date	27 August 2023
Time	9:00–12:00 h
Duration	3 h plus coffee break
Location	CICG Geneva
Fees	130 CHF (delegate) 80 CHF (student)
Included	Coffee break If booking 2 courses: lunch

Instructors

Prof. Chan Cao

Dr. Chan Cao is a Group leader (Prima fellow) in the school of life science at EPFL. She received her PhD in Analytical Chemistry from ECUST (Shanghai, China) in 2017, after which she worked as a postdoc fellow at EPFL.

Her research interests center around the development and application of advanced nanotechnology to study the properties, structure, dynamics and function of biomolecules of interest at the atomic and molecular levels. In particular, she is specialized in nanopore single-molecule technology, including engineering and design of biological nanopores, detection of protein biomarkers, single-molecule protein sequencing, and molecular digital data storage.
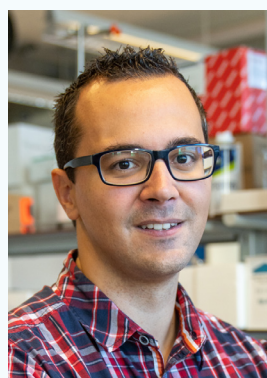
Dr. J. F. Bada Juarez

Dr. Juan Francisco Bada Juarez is a postdoc working in the lab of Dr Chan Cao at Ecole Polytechnique Fédérale de Lausanne. He was awarded his DPhil in Biochemistry from University of Oxford (UK) in 2019 and then joined Cao's lab as a postdoc to work on biological nanopores. His background is focused on membrane protein biophysics, structural biology and more specifically on protein-lipid interactions. His current main research interests are the development of biological nanopores for diverse purposes such as protein biomarkers detection and the structural characterization of novel nanopores for biotechnological applications.

www.euroanalysis2023.ch/courses.html