



AVVISO DI SEMINARIO

Il giorno **21 settembre 2026** alle
ore 12:00

in aula **Grassano**
(dipartimento di Fisica)

Dr. Alisa Rudnitskaya

Department of Chemistry and the Centre for Environmental and
Marine Studies (CESAM) at the University of Aveiro, Portugal

terrà un seminario dal titolo

Rapid methodologies for Harmful Algal Blooms monitoring

Proponente: Prof.ssa Larisa Lvova

Rapid methodologies for Harmful Algal Blooms monitoring

Dr. Alisa Rudnitskaya

Department of Chemistry and the Centre for Environmental and Marine Studies (CESAM) at the University of Aveiro, Portugal

Abstract

The proliferation of microalgae, known as harmful algal blooms (HABs), is a recurrent phenomenon in coastal waters worldwide, including European coastal areas, and its frequency and intensity are exacerbated by climate change and nutrient runoff. These events cause significant economic losses in aquaculture and fisheries through fish kills and pose food safety risks to human health, primarily due to toxins produced by certain microalgal species that accumulate in bivalve shellfish.

Due to the unpredictable nature of HAB events, coastal countries have established national toxin monitoring programs, in accordance with EU legislation, to track marine biotoxins in bivalves and to detect toxin-producing microalgae. Under current EU regulations, the official methods for toxin detection are liquid chromatography based (LC-FLD, LC-MS/MS, HPLC-UV), while the taxonomic identification and enumeration of toxic microalgae are mainly performed using inverted microscopy. Since these laboratory techniques are time-consuming and require highly skilled personnel, significant efforts have been directed toward developing sensors and assays that are cheaper and easier to implement.

This seminar will present research carried out in the Chemistry Department at the University of Aveiro aimed at developing rapid tools and methodologies for detecting marine toxins and toxic microalgal species, based on chemical sensors, biosensors, and hyperspectral near-infrared imaging.

Brief CV

Alisa Rudnitskaya is a researcher at the Department of Chemistry and the Centre for Environmental and Marine Studies (CESAM) at the University of Aveiro, Portugal. She received her PhD in Analytical Chemistry from the University of St. Petersburg, Russia, in 1997. Her research focuses on the development of electronic tongue multisensor systems, sensing materials for electrochemical sensors, and chemometric data analysis.

Throughout her career, she has participated in and coordinated several research projects funded by national and international funding programmes, including the EEA Grants and Horizon Europe. To date, she has more than 100 papers indexed in Web of Science and Scopus, with an h-index of 45 in Scopus. She serves as an editor for the journals Biosensors and Sensors (MDPI).

