



FKKT

UNIVERZA V LJUBLJANI
Fakulteta za kemijo in kemijsko tehnologijo

VABILO NA PREDAVANJE
V OKVIRU DOKTORSKEGA ŠTUDIJA
KEMIJSKE ZNANOSTI / INVITATION TO THE
LECTURE WITHIN DOCTORAL PROGRAMME IN
CHEMICAL SCIENCES

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z naslovom / title:

**Contaminants in natural and protected areas
and their impacts**

v sredo, 25. 3. 2026 ob 15. uri
v predavalnici 1 v 1. nadstropju Fakultete za kemijo
in kemijsko tehnologijo, Večna pot 113 /
on Wednesday, 25. 3. 2026 at 15.00
in lecture room 1, 1st floor at the Faculty of
Chemistry and Chemical Technology, Večna pot 113

Vljudno vabljeni! / Kindly invited!



Abstract:

During the last decades, the pressure of organic contaminants in the environment has increased continuously, as new chemicals are produced and released into the environment every day. More than 350,000 chemicals and mixtures are registered for production and use worldwide, and their production is expected to increase in the following decades. This great amount of synthetic chemicals represents a challenge for their testing, regulation and monitoring, since they comprise different chemical families (pesticides, pharmaceuticals, plasticisers, persistent organic pollutants, flame retardants, polycyclic aromatic hydrocarbons, etc.), are partitioned in the several environmental compartments at different concentrations and their behaviour in the environment is complex. Toxicologically, chemical pollutants have the capacity to interact with organisms even at very low concentrations levels acting as endocrine disruptors, genotoxic, or neurotoxic agents. These effects are translated into alterations in the reproduction, development, immune system or behaviour of individuals, with potential implications at population levels, or even the extinction of the very sensitive ones.

This study aims to quantify the impact of organic contaminants in natural ecosystems considering water, soil and sediment and birds as biomonitors. Most of the study areas are Important Bird and Biodiversity Areas (IBAs), which are sites identified by BirdLife International as being of global importance for the conservation of bird's population and biodiversity in general. The IBA programme was created in 1979 in Europe and has grown to the present day. Today, it is the largest network of conservation sites in the world, with 13,600 identified IBAs covering 9% of the world's land area and 2% of the world's marine area. In Europe, the IBAs inventory (Figure 1) is used as a reference for the designation of Special Protection Areas (SPA) under the birds directive (Directive 2009/147/EC) as part of the Natura 2000 network of sites, which provides the most important legal protection of habitats and species in Europe.

Since 2019-2020, we are undertaken a large monitoring program to determine organic contaminants in water, soils, and sediments from 140 IBAs from Spain to assess the pressure of chemical pollution in natural sites and to provide information to determine potential sources of contamination, distribution patterns and impacts on avifauna. In this talk, the sampling design, analytical methodology and the results obtained will be presented to highlight the importance of chemical monitoring to preserve natural areas of high ecological value.