



PhD fellowship on chemical additives associated with plastics

The institute

The **Institute of Environmental Assessment and Water Research (IDAEA)** is an environmental science institute devoted to the study of the human footprint on the biosphere. Much of the research work at this institute is centred on two of the great environmental challenges of our time: cleanliness and availability of water and quality of air.

Founded in 2008 as a member of the **Spanish National Research Council (CSIC)**, the Institute brings together a wide range of expertise in environmental science. It is organized under two Departments (Environmental Chemistry and Geosciences), established with a strong record of publication in top scientific journals, leading international projects, membership on international committees, and adopting a high-profile contribution to the identification and remediation of environmental problems.

IDAEA has demonstrated strengths in the analysis of organic pollutants and their impact on ecosystems, the study and management of water resources, the development of multivariate resolution algorithms in chemometrics, and in the study of inhalable particulate matter and toxic gases.

IDAEA has been recently awarded with the distinctive **Centre of Excellence “Severo Ochoa”** (2020-2023), distinction that indicates the high-quality scientific leadership and global impact of the work developed at the centre.

We offer a diverse and inclusive environment where no discrimination against disability, gender, nationality, religion or sexual orientation will occur during the selection process.

The group

The Water, Environmental and Food Chemistry (ENFOCHEM) unit focuses its research on the presence, impact and fate of organic pollutants in the water cycle, terrestrial environment, biota, food and humans, including not only those that are regulated in the legislation (priority contaminants), such as pesticides, polycyclic aromatic hydrocarbons, alkylphenols, phthalates, brominated flame retardants but also contaminants of recent identification (contaminants of emerging concern), such as pharmaceuticals, personal care products, chlorinated paraffins, organophosphate plasticizers, drugs of abuse and perfluorinated compounds for which

environmental occurrence and ecotoxicity data are very scarce. This involves their monitoring in field samples and assessment of their degradation/metabolism in different types of water matrices, particulate matter, sediments, soils, sewage sludge, air, aquatic and terrestrial organisms, crops, food and biological samples from humans. It further deals with the bioaccessibility, bioaccumulation and biomagnification through the food web of contaminants in biota and humans. This research line has a long history of monitoring activities, which have been carried out in very diverse areas, going from remote areas (for instance, the Antarctic) to local rivers. The research group has broad experience in coordinating national and international research projects funded by the European Commission, other International Institutions, and the Spanish Government. (<https://www.idaea.csic.es/research-group/enfochem/>)

Scientific activity of Ethel Eljarrat team is focused on persistent and emerging organic pollutants, with special emphasis on halogenated and organophosphate flame retardants, chlorinated paraffins, pyrethroid insecticides and apolar pesticides. Research focuses on the impact of plastic pollution, bioaccumulation and biomagnification in aquatic and terrestrial organisms, as well as human exposure to these pollutants through food and indoor/outdoor. (<https://www.idaea.csic.es/person/ethel-eljarrat-esebag/>)

The ENFOCHEM team has fully equipped laboratories with instrumentation for chemical analysis, such as: *Sample preparation*: automated solid phase extraction (SPE), turbulent flow chromatography (TurboFlow, Thermo Fisher), pressurized liquid extraction (ASE 350, Dionex); *LC-MS instruments*: UPLC-QqQ-MS, TQD (Waters), LC-QqQ-MS, TSQ Vantage (Thermo Fisher Scientific), UHPLC-Orbitrap-MS, Q-Exactive (Thermo Electron); and *GC-MS instruments*: instruments with different provisions: electronic impact and/or chemical ionization sources; single quadrupole, triple quadrupole, time-of-flight of quick scanning, and quadrupole–high resolution orbitrap.

The role

PhD student

Field of research: Chemical additives associated with plastics; Food contamination; Migration tests; Human impact.

Research project: HUMAN EXPOSURE ASSESSMENT TO CHEMICAL ADDITIVES ASSOCIATED WITH PLASTICS THROUGH INGESTION.

The project includes a PhD stay (2 months) in the department of Environment and Health from Vrije Universiteit Amsterdam, for the development of an analytical methodology for the simultaneous identification of polymer types and chemical additives in plastic particles using a pyrolysis-GC-MS system.

What do we look for?

- **Qualifications**
M.Sc. completed in Chemistry or similar
- **Professional experience**
No specific professional experience is required.
- **Competences**
High level of English

Value will be given to candidates with:

- High motivation, initiative and independence
- Good team-working skills
- Programming skills

Working conditions

- **Full-time contract**
- **Target start date:** Flexible
- **Estimated annual gross salary:** FPI grant (Ministry of Science and Innovation) 21.000 euros

How to apply?

Those interested may email their **CV** and **motivation letter** to **Dr. Ethel Eljarrat** and **Dr. Teresa Moreno** at ethel.eljarrat@idaea.csic.es and teresa.moreno@idaea.csic.es, adding "PhD Position" to the email subject.

Deadline: 15th October 2020