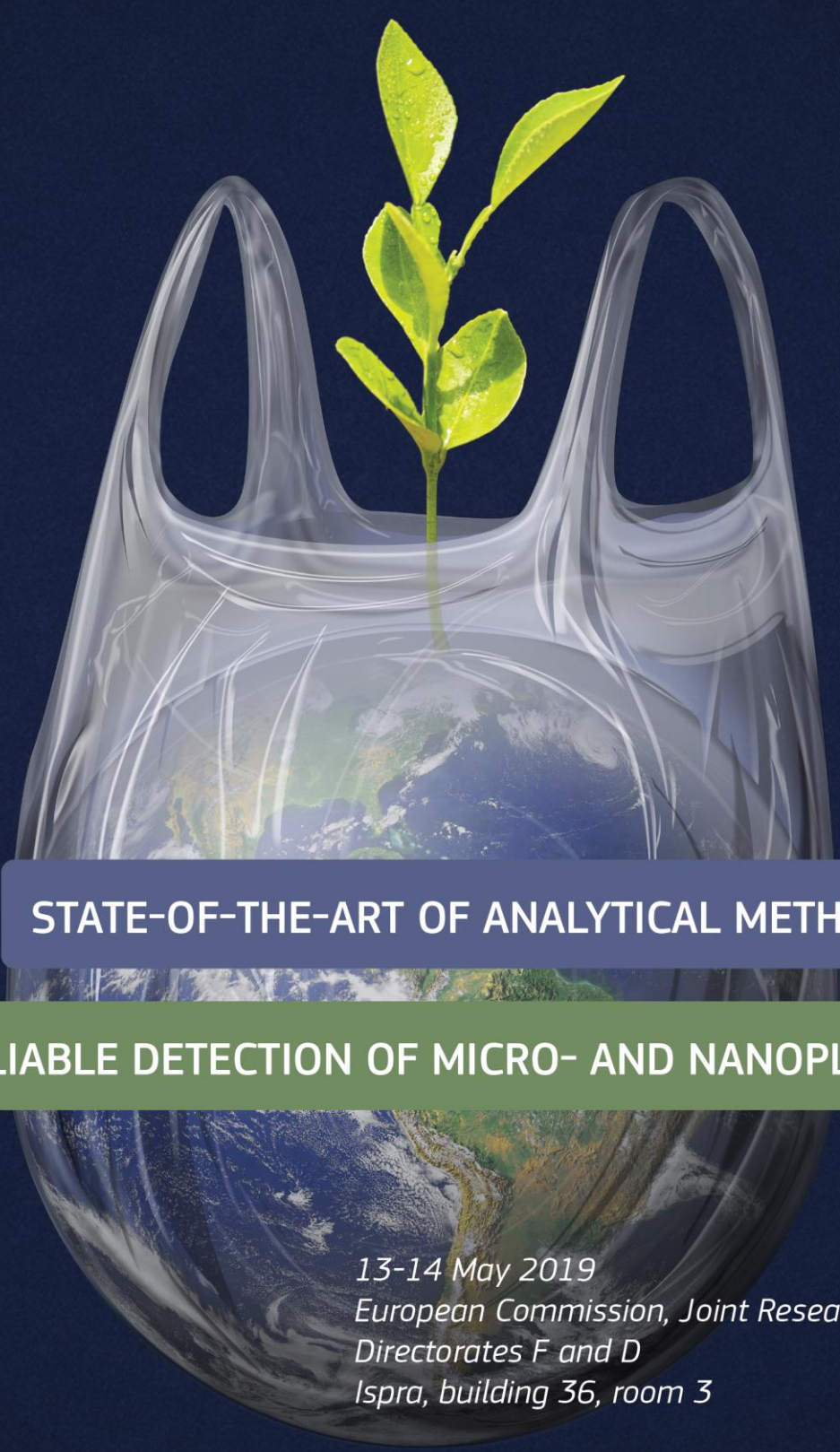




European  
Commission



# STATE-OF-THE-ART OF ANALYTICAL METHODS

## FOR RELIABLE DETECTION OF MICRO- AND NANOPLASTICS

13-14 May 2019  
European Commission, Joint Research Centre  
Directorates F and D  
Ispra, building 36, room 3

Joint  
Research  
Centre

**Agenda of the Workshop**  
**State-of-the-art of analytical methods for reliable  
detection of micro- and nanoplastics**

*European Commission, Joint Research Centre, Directorates F and D  
Ispra, building 36, room 3*

**13-14 May 2019**

*Rationale:* Microplastics (MPs) and possibly also nanoplastics (NPs) are widely diffused throughout the environment and concerns are growing that they may present a potential risk to the environment and human health via contamination of water, food, and air. There is a growing need for scientists and legislators to better understand this issue and in particular to have access to reliable information on the sources, presence, nature, and distribution of micro- and nanoplastic in different media and their potential effects. Unfortunately, the development of this knowledge base is being hindered, among others, by the absence of harmonized sampling/analytical procedures as well as a lack of quality assurance tools such as reference materials.

In order to close knowledge gaps the JRC plans a series of workshops which will bring together regulators and experts in the field of microplastics with the aim of defining priority areas and the most effective ways to tackle them.

This first workshop will bring together experts in the analysis and detection of micro- and nanoplastics. Available methodologies will be critically reviewed. Emphasis will be placed on defining practical actions to improve data quality and inter-comparability by promoting harmonisation and future method development. A first focus will be on the matrix water: surface water representing seas, tap water, and bottled water. As stakeholder networking is essential, the way forward for best expert collaboration will be discussed as well.

This workshop aims to provide horizontal support to EU policies by promoting the development and harmonisation of analytical methods for the measurement of micro- and nanoplastics, which could be used in different legal frameworks.

# Monday, May 13

12:30 Registration & Buffet Lunch

## 13:30 Welcome and introduction to the workshop

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**Elke Anklam (Director JRC.F) and Jann Martinsohn (Head of Unit JRC.D.2)**

## 13:45 Setting the Scene

Moderator: Elke Anklam (EC-JRC)

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- **How concerned should we be about microplastics? Results from the SAPEA report**

*Claus Svendsen and Richard Cross, Centre for Ecology and Hydrology, Wallingford, UK*

- **What do we need to measure?**

- **Requirements from scientific / risk assessment perspective,**  
*Nanna Hartmann (DTU, DK)*
- **Requirements from an environmental driven perspective with focus on wastewater and its intended reuse,** *Simona Tavazzi (EC-JRC)*
- **Requirements from a life cycle assessment perspective,**  
*Erwan Saouter and Esther Sanye Mengual (EC-JRC)*
- **Requirements from the food perspective,**  
*Karen Mackay (EFSA)*

- **Discussion of measurement needs**

Questions to address: Detailed analysis of single particles *versus* a bulk quantification of polymer material?  
Identification of the origin of microplastics (e.g. tyres, textiles etc..) in view of designing policy measures?  
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15:45 Photo opportunity & Coffee break

## 16:15 Considerations on real word measurement

Moderator: Birgit Sokull-Klüttgen (EC-JRC)

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- **The importance of sampling**

*Claus-Gerhard Bannick (German Environment Agency, DE)*

- **Analytical method harmonisation (including sample preparation), experience from the BASEMAN project**

*Gunnar Gerdts (Alfred Wegener Institute for Polar and Marine Research, DE)*

- **Lessons learned from literature reviews with focus on quality issues of the currently applied methodologies, including sample preparation**

*Inneke Hantoro (Open University of Netherlands, NL) and Brigitte Toussaint (EC-JRC)*

- **Microplastics for Research and Risk Assessment, first results**

*Albert van Oyen (Carat, DE)*

- **Discussion of challenges in measurement**

**18:00 End of 1st day**

**18:30 Social dinner (JRC clubhouse)**

## Tuesday, May 14

### 09:00 State-of-the-art analytical methods

Moderator: Douglas Gilliland (EC-JRC)

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- **Low-cost routine techniques for detection and quantification (staining and optical microscopy), including limitations**  
*Yolanda Pico Garcia (CSIC-UV-GV, ES)*
- **Advanced techniques for identification and characterisation, including limitations**
  - FTIR *Nikki van Alst (Aalborg University, DK)*
  - RAMAN *Natalia P. Ivleva (Technical University of Munich, DE)*
  - TOF-SIMS *Harald Jungnickel (BfR, DE)*
  - PyGCMC/Thermodesorption *Ulrike Braun (BAM, DE)*
- **What can the analytics of nanomaterials bring to the detection of microplastics?**  
*Douglas Gilliland (EC-JRC)*
- **Discussion of analytical methods**

11:00 Coffee break

### 11:30 Practical actions to promote the harmonisation of methods

Moderator: Arnd Hoeveler (EC-JRC)

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- **Short overview of standardisation activities in ISO & CEN**  
*Claus-Gerhard Bannick (German Environment Agency, DE)*
- **Method harmonisation & validation**  
*Heather Leslie (Vrije University Amsterdam, QUASIMEME, NL)*
- **Quality assurance tools: Towards proficiency tests and reference materials**  
*Andrea Held and Elzbieta Stefaniak (EC-JRC)*

### 12:30 Discussion of challenges, definition of actions, wrap-up

Moderator: Arnd Hoeveler (EC-JRC)

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Questions to address: Need for an expert network on analytical methods for the detection of microplastics?  
Who is interested to participate in a proficiency test?  
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### 13:00 Lunch (JRC Saletta)

### 14:30 Possibility of laboratory visits

### 16:00 End of the meeting

Transport to airport, station, or hotel