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## International Web Conference - Microplastics in Soils



First Project Workshop:  
"Microplastics in soils, compost and plants"

Web Conference on Big Blue Button  
9th and 10th of September, 2020  
8:45 - 14:00 CET

Free Participation, no fee required

Log in: <https://bbb.hszz.de/b/tom-edp-ifv>

Password: provided after registration



Institute of Process Development, Peat and  
Natural Product Research (iTN)  
University of Applied Science Zittau/Görlitz, Germany

## Preliminary Workshop Program, September 9th and 10th 2020

### September 9th - Analytics

08:45 **Login and Software Check**

09:00 **Introduction**

Jürgen I. Schoenherr (Zittau/Görlitz University of Applied Science, iTN)

#### Session 1, Chair: Tomas Kleint

09:05 **Microplastics  
in Soils, Compost and Plants**

Anne Richter, Tomas Kleint, Faith Chebet Tumwet,  
Madlen Reuter (Zittau/Görlitz University of Applied Science)

09:30 **Some Basic Aspects of Polymer  
Chemistry and Interfaces (and their Potential  
Impact on the Behavior of Microplastic)**

Jens Weber (Zittau/Görlitz University of Applied Science, iTN)

10:00 **Evaluation of Microplastic Types used  
in Scientific Studies**

Stefanie Maaß (Technische Universität, Berlin)

10:30 **Break**

#### Session 2, Chair: Tomas Kleint

11:30 **Analytics of Microplastics by  
Quantitative 1H-NMR Spectroscopy**

Nadine Peez (Universität, Koblenz-Landau)

12:00 **Characterization of Microplastics by  
RAMAN-assisted Microscopy**

Andrea Käppler (Leibniz-Institut, Dresden)

12:30 **Sampling, Sample Treatment and Density  
Separation of Microplastics in Compost**

Daniela Thomas (Thünen-Institut, Braunschweig)

13:00 **Brief conclusion**

Jürgen I. Schoenherr (Zittau/Görlitz University of Applied Science, iTN)

### September 10th - environmental effects

08:45 **Login and Software Check**

09:00 **Introduction**

Jürgen I. Schoenherr (Zittau/Görlitz University of Applied Science, iTN)

#### Session 3, Chair: Anne Richter

09:05 **Bio-based Plastics in Soil and  
Compost/Uptake of Microplastics by  
Plants**

Marika Smith (City Council of Victoria, Canada)

09:35 **Modeling of Input Quantities of  
Agricultural Microplastics**

Elke Brandes (Thünen-Institut, Braunschweig)

10:05 **Effects of Microplastics on Soil  
Animals**

Frederik Büks (TU Berlin)

10:35 **Break**

#### Session 4, Chair: Madlen Reuter

11:35 **Microplastics in Rivers and Lakes with  
Focus on Tire Wear**

Stephan Wagner (Helmholz-Zentrum für  
Umweltforschung - UFZ)

12:05 **Fragmentation of Polymer-based  
impurities in Organic Waste Treatment Plants**

Jakob Hildebrandt (Zittau/Görlitz University of Applied Science, iTN)

12:35 **Developing of Sensor-based Sorting Processes  
in Plastics**

Hendrik Beel (Steinert UniSort GmbH, Zittau)

13:05 **Conclusion**

Jürgen I. Schoenherr (Zittau/Görlitz University of Applied Science, iTN)

## Background:

### Scientific Background

For several years now, numerous projects have been researching the topic of microplastics. It is assumed that soils act as sinks for microplastics and that they accumulate microplastics more than aquatic ecosystems. Extent and effects of the contamination are subject of current research.

### Workshop Background

Within the young researcher's project "Microplastics in soils", the series of workshops "International Conference on Microplastics in Soils" was launched with the aim of providing information on current research projects and results from various institutions. The key topics are

- Analytics
- Process Engineering
- Monitoring
- Effects on Vegetation
- Modeling



The participation of different researchers in the field of microplastics can lead to the exchange of information, new contacts and new synergies in order to better meet the various challenges in microplastics research

Flyer Version: August 10th, 2020

## Project & Members:

### Integration of the project in the institute

Since 2006, the Institute for Process Development, Peat and Natural Products Research has been researching in various projects in the field of plastics sorting and vegetation/soil analyses in the following working groups



- Process development
- Soil and Geotechnical Engineering
- Peat and Humic Substances

The new research project "Microplastics in soil" has established a new research focus that combines interdisciplinary tasks in the fields of chemistry, agricultural ecology, process engineering and modelling.

### Goals

- Creation of a database of properties and characterization methods of various plastics.
- Development of a simple and inexpensive analysis method for plastics from soils.
- Development of an elimination method of plastics from soil/compost.
- Implementation of an extensive monitoring and identification of contamination hotspots.
- Investigation of effects of Microplastics on vegetation
- Development of a forecast model for transport of Microplastics in soil.
- Investigation of plastic decay processes (degradation)

### Participants

**Team Tutors:** J. I. Schoenherr, J. Weber, J. Dörnchen-Neumann, T. Scheytt, N. Klammerth

**Team Members:** T. Kleint, M. Reuter, A. Richter, F. C. Tumwet

## Contact

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### Registration

The access data for the meeting room will be sent to you after the successful registration. Please send a registration form to Anne Richter enclosing the completed data protection statement.

Registration by: **August 28th, 2020**

### Inquiries & Contributions

For professional and technical issues before the event, as well as for the submission of the contributions, please contact Madlen Reuter by

**September 4th, 2020**



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