



LATVIJAS  
UNIVERSITĀTE  
ANNO 1919  
UNIVERSITY OF LATVIA



IEGULDĪJUMS TAVĀ NĀKOTNĒ

# ***PROGRAM AND ABSTRACTS***

*International Workshop*

## Peat and humic substances and their application



University of Latvia, Riga, Latvia  
October 10—12, 2013



IEGULDĪJUMS TAVĀ NĀKOTNĒ

**INTERNATIONAL WORKSHOP  
PEAT AND HUMIC SUBSTANCES AND  
THEIR APPLICATION**

**10<sup>th</sup> – 12<sup>th</sup> October 2013  
Riga (Latvia)**

**PROGRAM AND ABSTRACTS**

# *Organizing committee of conference*

## *Local organizing committee*

Māris Kļaviņš University of Latvia  
Indriķis Muižnieks University of Latvia  
Valērijs Kozlovs Latvian Peat Society  
Oskars Purmalis University of Latvia  
Jānis Krūmiņš University of Latvia  
Karina Stankeviča University of Latvia

## *International organizing committee*

Māris Kļaviņš University of Latvia  
Jānis Šīre University of Latvia  
Inese Silamiķele University of Latvia  
Jürgen Schoenherr Institute for Process Development, Peat and Natural Products, Germany  
Riitta Korhonen Finnish Peatland Society

*Organization of the conference is financially supported by ERAF project  
“Innovation in peat research and creation of new products”*

## *Venue of the workshop*

*Faculty of Geography and Earth Sciences, University of Latvia  
Alberta str. 10, Riga LV-1586, Latvia  
Room 313*

## CONFERENCE PROGRAM

Thursday, October 10

### REGISTRATION & OPENING

09:00 – 10:00 **Registration and coffee**

10:00 – 10:30 **Conference opening.**

**Chairperson: Māris Kļaviņš**, University of Latvia

*Prof. Indriķis Muižnieks*, Vice-rector for research, University of Latvia

*Prof. Oļģerts Nikodemus*, Dean of Faculty of Geography and Earth Sciences, University of Latvia

*Doc. Inese Silamiķele*, Project coordinator, University of Latvia

*Dr. geol. Ilze Ozola*, Managing director, Latvian Peat Producers Association

### PLENARY SESSION

**Chairperson: Oļģerts Nikodemus**, University of Latvia

10:30 – 11:00 **Mire formation and development in Latvia**

*Laimdota Kalniņa*, University of Latvia, Latvia

11:00 – 11:30 **Stress by humic substances stabilizes populations in freshwater systems**

*Christian E.W. Steinberg*, Humboldt-Universität zu Berlin, Germany

11:30 – 12:00 **Influence of naturally occurring humic acids and synthetic humic acid-like polymers on the blood clotting system**

*Hans-Peter Klöcking, Nicol Mahr and Renate Klöcking*, Jena University, Germany

### LUNCH

12:00 – 13:00

### ORAL SESSION

**Chairperson: Laimdota Kalniņa**, University of Latvia

13:00 – 13:20 **Humification impact on properties and structure of humic acids**

*Oskars Purmalis and Māris Kļaviņš*, Department of Environmental Sciences, University of Latvia, Riga, Latvia

13:20 – 13:40 **Humic substance profiles of selected North German mires**

*Renate Klöcking, Guido Meyer, Dierk Michaelis, Hans Joosten, Marc Conrad, Jürgen I. Schoenherr*, Institute for Process Development, Peat and Natural Products, Zittau/Görlitz University of Applied Sciences, Zittau, Germany

13:40 – 14:00 **In vitro safety and efficiency testing of peat derived active substances for cosmetic applications**

*Anna Ramata-Stunda, Baiba Silamiķele, Diāna Borovikova, Jānis Kungs, Inese Čakstiņa and Jānis Ancāns*, Department of Microbiology and Biotechnology, Faculty of Biology, University of Latvia, Riga, Latvia

- In vitro* immunostimulating properties of peat derived biologically active substances – effects on cytokine secretion in mononuclear cells and keratinocytes**  
 14:00 – 14:20 *Anna Ramata-Stunda, Baiba Silamiķele, Inese Čakstiņa, Ilze Paeglīte, Oskars Purmalis and Indriķis Muižnieks*, Department of Microbiology and Biotechnology, Faculty of Biology, University of Latvia, Riga, Latvia
- Effect of peat-derived humic acid extract on human dermal fibroblasts *in vitro***  
 14:20 – 14:40 *Anna Ramata-Stunda, Baiba Silamiķele, Inese Čakstiņa, Oskars Purmalis, Jānis Kungs and Indriķis Muiznieks*, Faculty of Biology, University of Latvia, Riga, Latvia
- The study of the effect of Finnish sauna with and without peat mask on recovery of soccer players**  
 14:40 – 15:00 *Leena Larva and Riitta Korhonen*, Aino Klinikat, Finnish Peatland Society, Finland
- Peat balneology in Finland**  
 15:00 – 15:20 *Riitta Korhonen*, Finnish Peatland Society, Finland

#### COFFEE BREAK

15:20 -15:50

#### ORAL SESSION

**Chairperson: Anna Ramata-Stunda**, University of Latvia

- Agroecological Value of Peat and Sapropeel as Raw Materials for Fertilising Mixtures and Ameliorants Preparation**  
 15:50 – 16:10 *Guennadi Sokolov, Nikolay Bambalov and Olga Krasnoberskaya*, Institute on Nature management, National Academy of Sciences of Belarus, Belarus
- Heavy metal removal from wastewater using peat**  
 16:10 – 16:30 *Artis Robalds, Māris Kļaviņš and Līga Dreijalte*, Department of Environmental Science, University of Latvia, Riga, Latvia
- Usage of peat derivatives in a field of medicine and pharmacology (a review)**  
 16:30 – 16:50 *Dmitrijs Poršņovs and Māris Kļaviņš*, Faculty of Geography and Earth Sciences, University of Latvia, Riga, Latvia
- Effects of humic substances on seed germination and plant growth**  
 16:50 – 17:10 *Jānis Šīre and Ģederts Ieviņš*, Faculty of Geography and Earth Sciences, University of Latvia, Riga, Latvia

#### WELCOME RECEPTION

19:00

## Friday, October 11

### ORAL SESSION

Chairperson: Jānis Šīre, University of Latvia

- 10:00 – 10:20 **The study of natural products of brand GreenOk as highly effective tools for increasing the yield of crops**  
*Olegs Kukainis and Nikolajs Vigovskis*, Latvian Institute of Humic Substances, Riga, Latvia
- 10:20 – 10:40 **Peat sorbents for metalloid – arsenic, antimony and tellurium removal**  
*Linda Ansons, Maruta Jankevica and Māris Kļaviņš*, Department of Environmental Science, University of Latvia, Riga, Latvia
- 10:40 – 11:00 **Sapropel diagenesis in Latvia, properties and application potential**  
*Karina Stankeviča, Līga Rūtiņa, Sabīne Bunere, Aija Ceriņa, Liene Ustupe and Māris Kļaviņš*, Department of Environmental Science, University of Latvia, Riga, Latvia
- 11:00 – 11:20 **The impact of structure's and properties of humic substances on their interaction with environmental pollutants**  
*Diāna Dūdare and Māris Kļaviņš*, Faculty of Geography and Earth Sciences, University of Latvia, Riga, Latvia
- 11:20 – 11:40 **Application of peat for liquid radioactive waste purification**  
*Andris Abramenskova, Māris Kļaviņš, Jānis Rudzītis, Andris Popelis and Jānis Alksnis*, Latvian Environment, Geology and Meteorology Centre, Riga, Latvia
- 11:40 – 12:00 **Reasons of changes in the landscape of peat bogs and the possible methods of their restoration of moscow Meshchery**  
*T. Lykjanova, A. Sedrukova and Z. Tkacheva*, Moscow region University, Russia
- 12:00 – 12:20 **Effects of humic substances derived from sapropel on the growth of radish (*Raphanus sativus L.*)**  
*Sabīne Bunere, Karina Stankeviča*, Department of Environmental Science, University of Latvia, Riga, Latvia

### LUNCH

12:20 – 13:20

### POSTER SESSION

Chairperson: Jānis Šīre, University of Latvia

- 13:20 **Comparative study of differential thermogravimetry of peat and its fractions**  
*Jānis Krūmiņš, Māris Kļaviņš and Valdis Segliņš*, Department of Environmental Science, University of Latvia, Riga, Latvia
- Perspectives of fen peat as natural resource in Latvia – a review**  
*Jānis Krūmiņš, Māris Kļaviņš and Valdis Segliņš*, Department of Environmental Science, University of Latvia, Riga, Latvia



**Berry plants on cutaway peatlands in condition of Belarus**  
*Alexander Yakovlev*, Central botanical gardens of National Academy of Science, Minsk, Belarus

**Humic substances from sapropel and possibilities to use them as fertilizer**

*Līga Rūtiņa, Karina Stankeviča and Māris Kļaviņš*, Faculty of Geography and Earth sciences, University of Latvia, Riga, Latvia

**Ģeotelpiskās informācijas sistēmas izveide par Latvijas kūdras resursiem**

*Inga Piese, Lauris Laiko, Ināra Nulle, Zane Pavlovska, Agnese Jansone and Baiba Brikmane*, Latvian Environment, Geology and Meteorology Centre, Riga, Latvia

**Factorial analysis for the assesment of diagenesis of peat and peat humic acid composition**

*Valery Rodinov and Maris Klavins*, Department of Environmental Science, University of Latvia, Riga, Latvia

**Biological activity of moss extracts and hydrophobic substances in their content**

*Laura Kļavina, Lauris Arbidāns and Viktorija Maksimova*, Laboratory of environmental quality, Faculty of Geography and Earth Science, University of Latvia, Riga, Latvia

**UV Protection and biocompatibility of humic substances in the development of a peat based lipstick**

*Yvonne Felber, Renate Klöcking, Jürgen I. Schoenherr, Roland Schubert*, Institute for Process Development, Peat and Natural Products, Zittau/Görlitz University of Applied Sciences, Zittau, Germany

**Peat bog recultivation approaches in Latvia**

*Juris Nusbaums and Inese Silamiķele*  
Department of Environmental Science, University of Latvia, Riga, Latvia

#### **EXCURSION**

After 14:00      Excursion to „*Riga Art Nouveau Museum*“, Alberta street 12, Riga  
Excursion around *Riga Old Town*

#### **Saturday, October 12**

#### **EXCURSION**

9:00              Excursion to Ķemeri National Park, *Ķemeri Mire* - one of the largest raised bog in Latvia (6192 hectares)