

# Summer School Sustainable Waste and Waste Water Management

University networks cooperation  
University of Luxembourg and University of Trier

July 7 – July 12, 2014

## Overview

We would like to welcome you to the summer school held at the University of Luxembourg. Summer School is intended for PhD students, post-docs and MSc. students, industrial and research institutions in engineering and environmental studies, including solid waste and waste water managers, government as well as municipal employees who are interested in participation.

The summer school will have six days of lectures and training sessions and three field trips in Luxembourg, beside open talks distributed in the last day of summer school. They are a great way for participants to talk about practice and research.

## Lectures/ Training and Field trips

We will offer a considerable lectures session. The course is an opportunity to contribute on common vision of future sustainable solid waste, waste water, and energy from waste and waste water management for municipalities, business and households and represent an excellent possibilities to exchange experiences, to share perceptions and to start new joint activities. Moreover, it is a tradition for participants to get involved with the technology and the real situation and also improve solutions. We have reserved three days in the afternoon for field trip session after the lunch.

- Participants from university/administration : 300 euro
- Young researcher (under the age 30) : 120 euro

The fee covers - lectures - coffee breaks - lunches - banquet - excursion

Please pay your course fee to :

Bank : **Banque et Caisse d'Epargne de l'Etat**  
Account holder : **Université du Luxembourg**  
IBAN : **LU71 0019 2355 9897 2000**  
SWIFT - BIC : **BCEELULL**  
Communication : **FIC-ING-EVT-13ADSI Summer School + E-mail address of the participant**

\* We need the E-mail address of the participant whose fee is paid by the deposit, so we can cross-check and confirm your participation. Please retain the bank deposit slip with you for future reference.

## Summer School address

University of Luxembourg  
Campus Kirchberg  
6, rue Richard Coudenhove-Kalergi  
L-1511

## Course organizers

Prof. Dr. Wagner Jean-Frank, University of Trier  
Prof. Dr.-Ing. Hansen Joachim, University of Luxembourg



<http://summerschool2014.uni.lu>

08.30 – 10.00 **Prof. Dr.-Ing. Hansen Joachim**  
**MSc. Hien Sebastian**  
*Energy recovery strategies in the urban water cycle*

10.30 – 12.00 **MSc. Hien Sebastian**  
*Urban mining in Wastewater treatment plants - Recovery of nutrients from Wastewater and sludge*

## Afternoon section

13.30 – 17.00 **Field trip to the WWTP Bettembourg (Energy production on an anaerobic sludge digestion; solar drying of sewage sludge)**

19.30 **Banquet at the Restaurant "Bacchus" (32, rue du Marché-aux-Herbes)**

## Saturday, July 12

### Morning section

08.30 – 10.00 **Prof. Dr.-Ing. Rettenberger Gerhard**  
*Landfill reuse and urban mining*

10.30 – 12.00 **Evaluation of the summer school**  
**Open discussions with all lecturers**

### Afternoon section

13.30 – 15.30 **Visit of Casemates and City of Luxembourg**

## Everyday

10.00 *coffee break*

12.00 *Lunch break, except Saturday*

15.30 *coffee break* except for field trip

## Course language: English

## Course Fee

- Participants from private sector : 450 euro

## Speakers

- Dr. Dorvil Patrick L.,  
European Investment Bank, Luxembourg
- apl. Prof. Dr. habil. Emmerling Christoph,  
University of Trier, Germany
- Prof. Dr. Dr. Fischer Klaus,  
University of Trier, Germany
- Prof. Dr.-Ing. Greger Manfred,  
University of Luxembourg
- Prof. Dr.-Ing. Hansen Joachim,  
University of Luxembourg
- Mr. Hart Stephen,  
European Investment Bank, Luxembourg
- MSc. Hien Sebastian,  
University of Luxembourg
- Dr.-Ing. Knerr Henning,  
University of Kaiserslautern, Germany
- Prof. Dr.-Ing. Rettenberger Gerhard,  
University for Applied Sciences Trier, Germany
- Dr. Schutz Georges,  
CRP Henri Tudor /CRTE, Luxembourg
- Prof. Dr. agr. habil. Thiele-Bruhn Soeren,  
University of Trier, Germany
- Prof. Dr. Wagner Jean-Frank,  
University of Trier, Germany
- MSc. Weber Simon,  
University of Luxembourg

## Schedule

### Monday, July 7

University of Luxembourg, Campus Kirchberg

#### Morning section

- 8.30 – 8.45 **Prof. Dr.-Ing. Hansen Joachim**  
**Prof. Dr. Wagner Jean-Frank**  
*Welcome and Introduction*

08.45 – 09.15 **Dr. Dorvil Patrick L.**  
*EU waste management legislation*

09.15 – 10.00 **Prof. Dr.-Ing. Rettenberger Gerhard**  
*Recycling and energy recovery from solid waste*

10.30 – 11.15 **Prof. Dr. Wagner Jean-Frank**  
*MBT-Waste: Technology and material characteristics*

11.15 – 12.00 **Prof. Dr.-Ing. Rettenberger Gerhard**  
*Landfill gas emissions – methods for control and reduction*

#### Afternoon section

13.30 – 15.00 **Prof. Dr. habil. Emmerling Christoph**  
*Waste in agriculture and farming*

15.00 – 15.30 **Prof. Dr. Wagner Jean-Frank**  
*Behaviour of old and modern landfills*

16.00 – 17.00 **Dr. Dorvil Patrick L.**  
*Financing Solid Waste Projects in EU-sector: Sector Issues and Opportunities for EIB*

### Tuesday, July 8

#### Morning section

08.30 – 09.15 **Mr. Hart Stephen**  
*EU wastewater management legislation*

09.15 – 10.00 **Prof. Dr.-Ing. Hansen Joachim**  
*Sustainable use of energy in municipal Wastewater treatment plants*

10.30 – 12.00 **Dr.-Ing. Knerr Henning**  
*Close loop systems for a re-use of wastewater: theory and experiences*

#### Afternoon section

13.30 – 17.00 **Field trip to the Muertendall landfill**

### Wednesday, July 9

#### Morning section

08.30 – 10.00 **Prof. Dr.-Ing. Greger Manfred**  
**MSc. Weber Simon, University of Luxembourg**  
*Main features and characteristics of biogas production*

10.30 – 12.00 **Dr. Schutz Georges**  
*EOS- A multi criteria expert system for improving energy consumption on municipal WWTPs – theory and practice*

#### Afternoon section

13.30 – 15.00 **Prof. Dr. Dr. Fischer Klaus**  
*Importance of enzymatic processes for the removal of organic trace pollutants from Wastewater*

15.30 – 17.00 **Prof. Dr. agr. habil. Thiele-Bruhn Soeren**  
*Antibiotics in Waste and Wastewater*

### Thursday, July 10

#### Morning section

08.30 – 10.00 **Dr.-Ing. Knerr Henning**  
*Elimination of micropollutants from Wastewater Advanced oxidation processes*

10.30 – 12.00 **Dr. Dorvil Patrick L.**  
*Energy from Waste: EIB Contribution*

#### Afternoon section

13.00 **Field trip to the Heiderscheidergrund: (demonstration project within INTERREG IVb INNERS)**

### Friday, July 11

#### Morning section