

Detection of Emerging Pollutants in the Arctic Environment

Synopsis

Focus is on demonstration and discussion of challenges and pitfalls within modern trace analysis through practical experiences and experiments with Arctic environmental samples collected during field work.

Aims

To understand the role of analytical chemistry as an integrated environmental research topic for the overall environmental risk assessment in Arctic environments.

Objectives

At the end of the Unit, you should:

1. understand the role of analytical chemistry as integrated environmental research topic for the overall environmental risk assessment in Arctic environments
2. know the scientific validation principles and requirements underlying modern analytical chemical methods.
3. know the logistical and technological requirements for conducting fieldwork under Arctic conditions

Key Skills Acquired

At the end of this Unit, you should understand:

1. suitable strategies and technologies for determination and quantification of organic pollutants methods
2. the steps and the requirements of an instrumental method of analysis to fulfill the quality requirements
3. the logistical and technological requirements for conducting fieldwork under Arctic conditions

Syllabus

Topics covered include:

- strategies and technologies for a sound a reliable determination and quantification of organic pollutants
- principal method validation based upon standard quality control (QC) criteria
- evaluation of the quality of published data based upon QC protocols.
- method uncertainty and statistical evaluations

Learning & Teaching

- Lectures: 30 hr
- Field excursions: 6 days
- Laboratory work: 40 hr

Teaching Staff

Tomasz Maciej Ciesielski (Coord.)

Semester 2

Timetable slot Ca. 20. April – 05. June

ECTS 10

Level Optional

Bibliography

- AMAP Assessment 2015: Temporal Trends in Persistent Organic Pollutants in the Arctic (Download for free at amap.no)
- AMAP Assessment 2016: Chemicals of emerging Arctic concern. ISBN 978-82-7971-104-9 (Download for free at amap.no)
- Additional course material provided at the lectures and seminars

Assessment

- Written theory examination (70%)
- Laboratory work and report (30%)

Course Evaluation

By completion of University Unit Evaluation Questionnaire by students, annual assessment by Unit Co-ordinator.

