Module 20
Decomposition in microwave oven: a pretreatment method for determination of elements using atomic spectrometric methods

Held each autumn semester

Capacity: 6 students

Learning goal
After the approved module, you should be able to find the best conditions and perform decomposition of various materials in microwave oven as pre-treatment for determination of trace elements using atomic spectrometric methods. This involves knowledge of instrument (hardware and software of the microwave oven), operation principle, acid properties, safety aspects and quality control.

Content of the practical work
The supervisor will explain the function of the various part of the microwave oven (hardware and software) and demonstrate a decomposition method. Thereafter, the students should suggest a suitable decomposition method and perform decomposition for a given sample.

Literature to read (Literature 1 below) should be read before the course starts)*

1. "The art and science of microwave sample preparation for trace and ultra-trace elemental analysis" (Ch. 2 in "Inductively coupled plasma mass spectrometry", Ed. A. Montaser)
2. "Guidelines for microwave acid digestion" (Ethos 900 User manual), p.1-9
3. Slides from lecture

Literature 2) and 3) will be put out in Fronter

***Contact Grethe or Anne-Marie for a copy of the chapter in due time before the course starts (E-mail addresses below)**

Requirements:
You must have taken KJM2400 (or an equivalent course) to participate in this module.

Evaluation:
Requirements to get the module approved:

- participate in all parts of the module
- master the practical work
- deliver the report within the given deadline
- approved report

Personal
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Grethe Wibetoe (grethe.wibetoe@kjemi.uio.no), room Ø202

Time-schedule autumn 2016:
The module starts with a lecture on **Thursday 8th September at 13.15.** The practical work will take place during the following weeks (see below). Finally, there will be a summary meeting.

Time-schedule (based on two groups with maximum three students pr. group).
Changes in time schedule could be made (depends among other things, on the number of students).

Lecture, date	**Participants**	**Room**
Thursday 8/9 13.15 to about 15	Everybody	Ø108
Demonstration, dates		
Tuesday 13/9 11:00 to about 17	Group 1	Ø104
Thursday 15/9 11:00 to about 17	Group 2	Ø104
Practical work, dates		
Tuesday 20/9 11:00 to about 17	Group 1	Ø104
Thursday 22/9 11:00 to about 17	Group 2	Ø104
Dead-line for submitting journal (to Grethe Wibetoe)		
Three working days after the practical work	Everybody	
Summary meeting, date		
Thursday 29/9 at 13:15	Everybody	Ø108

For the demonstration and practical work bring lab.coat and goggles.