

**FYST36, 2019 HT. Molecular physics / Molekylfysik**

4/11, Monday 8:15 -10:00	Lecture	Introduction	ZSL	E421
7/11, Thursday 13:15 -15:00	Lecture	Rotation	ZSL	E420
11/11, Monday 8:15 – 10:00	Lecture	vibration	ZSL	E420
14/11, Thursday 13:15 – 15:00	Lecture	Selection rules	ZSL	E420
18/11, Monday 8:15-10:00	Lecture	Vibration Infrared & Raman	ZSL	E420
21/11, Thursday 13:15- 15:00	Lecture	introduction of HITRAN database	ALS	E420
22/11, Friday 13:15-15:00	Exercise	HITRAN database	ALS	E420
25/11, Monday 8:15- 10:00	Lecture	Electronic spectroscopy	ZSL	E420
28/11, Thursday 13:15-15:00	Lecture	Electronic spectroscopy	ZSL	E420
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2/12, Monday 8:15-10:00	Lecture	PGOPHER	PS	E420
5/12, Thursday 10:15-12:00	Exercise	PGOPHER	PS	E420
9/12, Monday 8:15-10:00	Lecture	ESR / NMR Surface/Spin- resonance/Mössbauer Spectroscopy	ZSL	E420
12/12, Thursday 8:15-10:00	Presentations Group 1	Mini-Symposium with Presentations	ZSL	E420
12/12, Thursday 10:15-12:00	Presentations Group 2	Mini-Symposium with Presentations	ZSL	E420
13/1, Monday 8:15-12:00	Written exam.		ZSL	E421

16/3, Monday 8:15-12:00	Re-exam. 'omtentamen'.		ZSL	E421

\* the week planned for laboratory excise!

### Important Tasks and Dates:

- Compulsory Weekly Exercises from the Text Book given each week, to be handed in a week later.
- Optional Home Exercise I, to be handed in Thursday 19/11
- Optional Home Exercise II, to be handed in Wednesday 25/11.
- Training of using infrared molecular database- HITRAN (supervised by Anna-Lena Sahlberg, 4 hours). Deadline for handing in Reports is 19/11 and deadline for Pass is 13/12.
- One compulsory Laboratory Exercise (supervised by Dina Hot and Shen Li, 4 hours) will be on week 48/49. Detailed schedule and groups will be arranged during the course. Deadline for handing in Reports is one week after the laboratory exercise and deadline for Pass is 21/12. The collected molecular spectra will be used for the following PGPPHER excise.
- Training of using a universal molecular simulation program PGOPHER (supervised by Per Samuelsson, 4 hours). Deadline for handing in Reports is 12/12 and deadline for Pass is 22/12.
- Small Project Presentations (10 – 20 minutes) on a Mini-Symposium Thursday 12/12.
- Written Examination Thursday 13/1 2020, 8:15-12:00

Well-Performed Home Exercises I and II and Pass of the program 'Training' reports will be granted with 50% bonus on the final examination.

September 22, 2019  
Zhongshan Li

**Text book:** *'Fundamentals of Molecular Spectroscopy'* by Banwell and McCash

### Contacts:

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