



Industrial Enzymes Manufacturing, stability and detection

March 26 - 28, 2025

At Hotel Ottilia Copenhagen
Near Carlsberg Brewery in Copenhagen,
Denmark

**Possibility to
join online**

Outcome

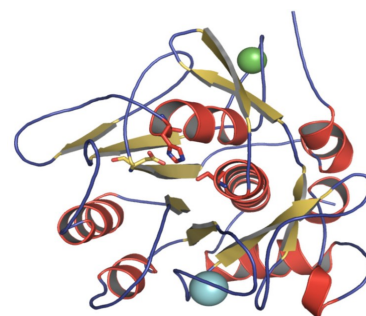
Through presentations, exercises and plenary discussions participants will acquire solid knowledge of enzyme activity, structure and function as well as understanding of the industrial manufacturing of enzymes, from expression and fermentation to recovery and formulation. The course enables participants to better understand enzymes and enzyme product stability, thereby enabling the participants to utilise enzymes in the optimal way in their own applications and processes.



Main subjects taught at the course

(see also last pages of flyer for the detailed program)

- What is an enzyme?
- Understanding enzymes - activity, structure and stability
- Enzyme classification
- Expression hosts used for industrial production of enzymes
- Fermentation and recovery
- Enzyme formulation
- Product stability
- Enzyme screening and detection
- Enzyme application - a case study



Target group

The course addresses chemical engineers, technicians, product and process engineers as well as all others working with enzyme products, e.g. in the food, feed, detergent industry, who would like to understand the fundamentals of enzymes as well as the manufacturing process, product stability and enzyme detection in their own applications.



Form

The course runs for three consecutive days with alternating presentations, exercises and plenary discussions. The course is held in English.

Course dinner

On the evening of the first day the participants are invited to a course dinner at a nearby restaurant in Copenhagen.



Registration and further information: Please see the next pages

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Teachers

Peter Dybdahl Hede, M.Sc. (Chem. Eng.), Ph.D.



- Master of science in Chemical and Biochemical engineering, Ph.D.
- Teaching experience from The Danish Society of Engineers, Technical University of Denmark and numerous training courses in enzyme technology
- Co-founder of seydlitz.dk
- Contact: pthd@seydlitz.dk

Pernille Ollendorff Hede, M.Sc. (Biochem.), Ph.D.



- +10 years experience within industrial Enzyme Engineering
- Teaching experience from the University of Copenhagen and numerous training courses in Industrial Biotechnology
- Master of science in Biochemistry, Ph.D.
- Contact: pohe@seydlitz.dk

Venue

Guest speakers:



Hotel Ottilia is located in the middle of the Carlsberg City, once the industrial area of the world-famous Carlsberg beer, now an upcoming area in Copenhagen kicking and buzzing with creative energy. Carlsberg City is nestled between Vesterbro, Frederiksberg, and inner city - and with easy access from CPH airport via train or metro - so when staying at Hotel Ottilia, you are just moments away from... well everything!



Hotel Ottilia Copenhagen

Address: **BRYGGERNES PLADS 7, DK-1799 COPENHAGEN, DENMARK**

Telephone: **+45 33 38 70 30**

Booking & service: **info@hotelottilia.dk**

Fee

The course fee is payable in advance and includes course materials, coffee & refreshments, lunch all three days and dinner on the first evening.

Physical presence: Per person EUR 2325,- plus VAT. VAT is reclaimable.

Online Presence: Per person EUR 2075,- (No VAT is charged)

Overnight stay at the delegates own expense can be arranged at the course venue or elsewhere nearby. Please contact Hotel Ottilia Copenhagen at: **+45 33 38 70 30** or **info@hotelottilia.dk**.

Kindly note that Copenhagen is very popular in spring time and that Copenhagen hotels may be fully booked well in advance.

Registration

Binding registration at **www.seydlitz.dk** under **"Courses"** no later than **February 15th 2025**. In case of any questions please contact: **info@seydlitz.dk** or phone **+45 44 10 87 00**.

The course may be subject to cancellation in case of too few participants

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Course contents

Day 1:	Subject
10.00 - 10.15	<u>Course introduction</u>
10.15 - 12.00	<u>Understanding enzymes</u> Definition of an enzyme Activation energy Specificity and activity Structure and stability Cofactors
12.00 - 13.00	Lunch
13.00 - 14.30	<u>Enzyme kinetics</u> Enzymatic reaction rate Michaelis–Menten kinetics Single-substrate reactions
14.30 - 16.00	<u>Enzyme classification</u> Enzyme classes and families What enzyme classes are used industrially?
18.00 - 21.30	Course dinner



CET time zone

Day 2:	Subject
9.00 – 10.30	<u>Industrial production of enzymes</u> Using single cells as small protein factories Fungal expression Bacterial expression Safety and Regulatory
10.30 – 12.00	<u>Fermentation and recovery</u> Cultivation of enzymes Recovery of enzymes Granulation of enzymes Sampling, sensor technology and data analysis
12.00 – 13.00	Lunch
13.00 – 14.30	<u>Enzyme formulation</u> Solid product formulation Liquid product formulation
14.30 – 16.00	<u>Product stability</u> Per se and in application enzyme stability Real time stability studies Modelling Examples of application studies focussing on stability



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Course contents - continued

Day 3:	Subject
9.00 – 10.30	<u>Enzymatic activity</u> Activity screening Enzyme detection
10.30 – 12.00	<u>Enzyme analysis</u> New enzyme assay technologies for industrial use Guest Speaker from GlycoSpot
12.00 – 13.00	Lunch
13.00 – 14.15	<u>A proprietary platform technology to rapidly develop novel enzyme application</u> Guest speaker from Allozymes
14.15 – 15.45	<u>Enzyme application - Case study from the Detergent industry</u>
15.45 – 16.00	Final remarks and wrap-up

CET time zone

GlycoSpot

allozymes



 **VISITCOPENHAGEN** THE OFFICIAL WEBSITE