SEYDLITZ®
SEYDLITZ.DK/COURSES Engineering Courses

Industrial Enzymes
Manufacturing, stability and detection

November 18 - 20, 2020

At Hotel Phoenix Copenhagen
in the Heart of Copenhagen, Denmark

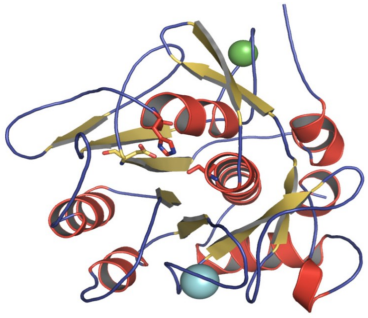
Outcome

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

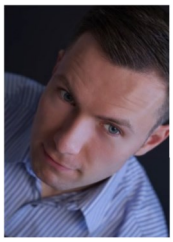
On the evening of the first day the participants are invited to a course dinner at a nearby restaurant in the heart of Copenhagen.

Registration and further information: Please see the next pages

Industrial Enzymes
Manufacturing, stability and detection
November 18 - 20, 2020

Teachers

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



- Head of R&D in industrial bio– and food technology and product formulation
- Teaching experience from The Danish Society of Engineers, Technical University of Denmark and numerous training courses in various engineering discplines
- 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

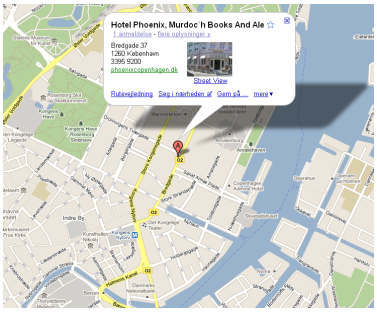
Guest speakers: PROXY GlycoSpot Tailorzyme

Venue

Hotel Phoenix Copenhagen is a 4-star deluxe hotel housed in one of Copenhagen's historic buildings. Situated in central Copenhagen, near Amalienborg Palace, just a few minutes' walk from Nyhavn, Kongens Nytorv, Strøget and other sights.

Address: **Bredgade 37, DK-1260 Copenhagen K, Denmark**

Telephone: **+45 33 95 95 00**
Booking & service: **bookphoenix@arp-hansen.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.

Per delegate EUR 2075,- plus VAT. VAT is reclaimable.

Overnight stay at the delegates own expense can be arranged at the course venue or elsewhere nearby. Please contact Hotel Phoenix Copenhagen at **+45 33 95 95 00** or **bookphoenix@arp-hansen.dk**.

Kindly note that central Copenhagen is very popular in the fall and that Copenhagen hotels may be fully booked well in advance.

Registration

Binding registration at **www.powderinfonews.com** under **"Courses"** no later than October 20th 2020. In case of any questions please contact **info@seydlitz.dk** or phone **+45 30 79 03 36**.

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

SEYDLITZ®
UNITED CONSULTANTS
Aalstrupvej 27
DK - 2500 Valby
Denmark

Tel + 45 30 79 03 36

CVR/VAT no. 34727082

info@seydlitz.dk
www.seydlitz.dk

Industrial Enzymes
Manufacturing, stability and detection
November 18 - 20, 2020

Course contents

Day 1:	**Subject**
10.00 - 10.15	Course introduction
10.15 - 12.00	Understanding enzymes Definition of an enzyme Activation energy Specificity and activity Structure and stability Cofactors
12.00 - 13.00	Lunch
13.00 - 14.30	Enzyme kinetics Enzymatic reaction rate Michaelis–Menten kinetics Single-substrate reactions
14.30 - 16.00	Enzyme classification Enzyme classes and families What enzyme classes are used industrially?
16.30 - 21.30	Course dinner in Nyhavn

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

Industrial Enzymes
Manufacturing, stability and detection
November 18 - 20, 2020

Course contents - continued

Day 3:	**Subject**
9.00 – 10.30	Enzymatic activity Activity screening Enzyme detection
10.30 – 12.00	Enzyme analysis New enzyme assay technologies for industrial use Guest Speaker from GlycoSpot
12.00 – 13.00	Lunch
13.00 – 14.00	Enzyme application - a case story Guest speaker from Tailorzyme
14.00 – 15.45	Enzyme application - Case study from the Detergent industry
15.45 – 16.00	Final remarks and wrap-up

VISITCOPENHAGEN THE OFFICIAL WEBSITE