

proBIOGAS International

Biogas engineering and operating training with field trips

September 17.–26., 2024

Venue: Steinbeis-Haus für Management und Technologie (SHMT), Stuttgart Hohenheim, Germany

Tuesday, September 17th – Practical Plant Engineering	
08:30	Registration
09:00	Welcome to the seminar <i>Michael KÖTTNER, IBBK Fachgruppe Biogas GmbH, Kirchberg/Jagst, Germany</i>
09:30	Overview of the national and int. Biogas industry and its future development <i>Michael KÖTTNER, IBBK Fachgruppe Biogas GmbH, Kirchberg/Jagst, Germany</i>
10:30	Coffee break
10:45	Decision criteria for a biogas plant <i>Katrin KAYSER, IBBK Fachgruppe Biogas GmbH, Kirchberg/Jagst</i>
12:15	Lunch
13:30	Introduction into plant technology <ul style="list-style-type: none"> • Digester types • Prestorage, feed in and pretreatment technology (ensiling, mixing pit, hydrolysis) • Other process technologies • Most common design principles • Shapes & designs of digesters and equipment <i>Michael KÖTTNER, IBBK Fachgruppe Biogas GmbH, Kirchberg/Jagst, Germany</i>
15:00	Coffee break
15:15	Planning and designing of stirring and mixing technology for digesters, mixing pits and storages <i>Farokh SAHRAEI, Xylem Water Solutions Global Services AB, Sundbyberg, Sweden</i>
16:45	Discussion
17:00	End of the day

Wednesday, September 18th – Practical Plant Engineering

09:00	<p>Pretreatment and pre-storage technology</p> <ul style="list-style-type: none"> • Ensilaging and pre-storage technology • Purpose and designing of mixing pit and hydrolysis phase • Pretreatment of difficult substrates • Dealing with high fibre and high nitrogen content <p><i>Michael KÖTTNER, IBBK Fachgruppe Biogas GmbH, Kirchberg/Jagst, Germany</i></p>
10:30	Coffee break
10:45	<p>Biogas specific building materials</p> <ul style="list-style-type: none"> • Design and suitability • Corrosion and operating conditions • Reliability and installation <p><i>Katrin KAYSER, IBBK Fachgruppe Biogas GmbH, Kirchberg/Jagst</i></p>
12:15	Lunch
13:30	<p>Process and external heat and gas engineering</p> <ul style="list-style-type: none"> • Gas pipeline • Type of heating • Heating of digester <p><i>Katrin KAYSER, IBBK Fachgruppe Biogas GmbH, Kirchberg/Jagst</i></p>
15:00	Coffee break
15:15	<p>Building a bio-waste and food waste plant</p> <ul style="list-style-type: none"> • Building materials • Operational requirements <p><i>Bernhard NATTERER, Finsterwalder Umwelttechnik GmbH, Bernau, Germany</i></p>
16:45	Discussion
17:00	End of the day

Thursday, September 19th – Practical Digester Biology

09:00	<p>Pumps and pump technology <i>Peter NEMETH, Pumpenfabrik Wangen GmbH</i></p>
10:30	Coffee break
10:45	<p>Process parameters</p> <ul style="list-style-type: none"> • Calculating retention time, organic loading rate and digester size • Determining electricity and heat production • Exploring efficiency factors of gas utilization • Discussion of the results <p><i>Michael KÖTTNER, IBBK Fachgruppe Biogas GmbH, Kirchberg/Jagst, Germany</i></p>
12:15	Lunch
13:30	<p>Crucial substrate parameters and their impact on plant performance</p> <ul style="list-style-type: none"> • Sampling and analysis methods for agricultural and industrial substrates • Definition of the substrate quality – right and wrong way of analyzing • Impact on planning, design and practical operation • Forecast possibilities on plant process disturbances <p><i>Gunther PESTA, CEO, ATRES-Group, Munich, Germany</i></p>
15:00	Coffee break
15:15	<p>Proper usage of digestate as organic fertilizer in agriculture</p> <ul style="list-style-type: none"> • Fertilizer management • Field application • Digestate processing • Fiber and fertilizer production <p><i>Michael KÖTTNER, IBBK Fachgruppe Biogas GmbH, Kirchberg/Jagst</i></p>
16:45	Discussion
17:00	End of the day

Friday, September 20th – Practical Plant Operation

09:00	<p>Meet the challenge: How to digest fibrous and N-rich feedstocks</p> <ul style="list-style-type: none"> • Characteristics of the substrates • Causes of an NH₃-inhibition (feedstocks, NH₃-formation, pH, temperature) • Counter measures, case studies and practical examples <p><i>Birgit PFEIFER, Schaumann BioEnergy Consult GmbH, Pinneberg, Germany</i></p>
10:30	Coffee break
10:45	<p>Process control and process optimization</p> <ul style="list-style-type: none"> • Inhibitors in anaerobic processes • Additives (trace elements, enzymes, sulphur binder, buffer) • Process control measures <p><i>Birgit PFEIFER, Schaumann BioEnergy Consult GmbH, Pinneberg, Germany</i></p>
12:15	Lunch
13:30	CHP
15:00	Coffee break
15:15	<p>Green Gas and Bio-LNG</p> <p><i>Alexey MOZGOVOY, Hitachi Zosen Inova Biomethan GmbH</i></p>
16:45	Discussion
17:00	End of the day

Monday, September 23rd –

08:00	Meet up parking plot Travel to Unterer Lindenhof
09:00	Digester Biology – an introduction <i>Dr. Andreas LEMMER, State institute of Agricultural Engineering and Bioenergy, University of Hohenheim</i>
10:30	Coffee break
10:45	Safety features of biogas plants and equipment <i>Katrin KAYSER, IBBK Fachgruppe Biogas GmbH, Kirchberg/Jagst</i>
12:15	Lunch
13:30	Guided tour of the "Unterer Lindenhof" research plant <i>Dr. Andreas Lemmer, State institute of Agricultural Engineering and Bioenergy, University of Hohenheim</i>
15:00	Coffee break
15:15	Maintenance of biogas upgrading units for sustainable plant operation <i>Ulf RICHTER, Richter ECOS GmbH</i>
16:45	Discussion
17:00	End of the day

Tuesday, September 24th – Visits

08:15	Visit 1
13:00	Lunch
14:30	Visit 2
18:15	End of day

Wednesday, September 25th – Visits

08:15	Visit 1
13:00	Lunch
14:30	Visit 2
18:15	End of day

Thursday, September 26th –

09:00	<p>Interactive group and field session – Necessary on site tests and practical interpretation of operating modes on a biogas plant</p> <ul style="list-style-type: none"> • Substrate and digester content sampling • Testing parameters during operation • Practical devices for plant monitoring • Record keeping • Technical and safety evaluation on a biogas plant <p><i>Katrin KAYSER, IBBK Fachgruppe Biogas GmbH, Kirchberg/Jagst</i></p> <p>Short travel by coach Meeting point: parking area in front of “SHMT” Meeting time: 8:30am Departure: 8:45am</p>
12:30	Lunch
14:00	<p>Different research activities at the laboratories of the University of Hohenheim</p> <p><i>Guided tour through the University Biogas Research Labs</i></p> <p><i>Dr. Andreas LEMMER, State institute of Agricultural Engineering and Bioenergy, University of Hohenheim</i></p>
15:00	Handout of the certificates and end of the event.

Program is subject to change

In cooperation with:

- the State Institute of Agricultural Engineering and Bioenergy, University of Hohenheim, Stuttgart, Germany
- Akademie Schloss Kirchberg, Kirchberg, Germany

