

proBIOGAS International

Biogas Engineering and Operating Training with Field Trips

April 21 – 29, 2020

Venue: SHMT – Steinbeis House for Management and Technology
Filderhauptstr. 142, 70599 Stuttgart

Tuesday, April 21 st – Practical Plant Engineering	
08:30	Registration
09:00	Welcome to the seminar – Introductory Round <i>Michael KÖTTNER, IBBK Fachgruppe Biogas GmbH</i>
09:30	Overview of the national and int. biogas industry and its future development <i>Michael KÖTTNER, IBBK Fachgruppe Biogas GmbH</i>
10:30	Coffee break
10:45	Decision criteria for a biogas plant <i>Katrin KAYSER, IBBK Fachgruppe Biogas GmbH</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</i>
15:00	Coffee break
15:15	Safety features of biogas plants and equipment <i>Katrin KAYSER, IBBK Fachgruppe Biogas GmbH</i>
16:45	Discussion
17:00	End of the day

Optional – 19:00: Meet + greet dinner at a typical restaurant in downtown Stuttgart

Wednesday, April 22nd – Practical Digester Biology

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	Biogas plant start-up and shutdown <ul style="list-style-type: none"> • Counter measures • Case studies • Practical examples <i>Birgit PFEIFER, Schaumann BioEnergy Consult GmbH, Pinneberg</i>
12:15	Lunch
13:30	Process control and process optimization <ul style="list-style-type: none"> • Inhibitors in anaerobic processes • Additives (trace elements, enzymes, sulphur binders, buffer) • Process control measures <i>Birgit PFEIFER, Schaumann BioEnergy Consult GmbH, Pinneberg</i>
15:00	Coffee break
15:15	Crucial substrate parameters and their impact on plant performance <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 <i>Gunther PESTA, CEO, ATRES-Group, Munich</i>
16:45	Discussion
17:00	End of the day

Thursday, April 23rd – Study Tours

08:15	Biogas Plant Visit TBC
13:00	Lunch in Hechingen

14:30	Biogas Plant Visit TBC
18:15	End of the day

Friday, April 24th – Study Tours

08:15	Biogas Plant Visit TBC
12:30	Lunch in Wolpertshausen
14:30	Biogas Plant Visit TBC
18:15	End of the day

Monday, April 27th – Practical Plant Operation

09:00	<p>Calculation exercises for feasibility and process control</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>
10:30	Coffee break
10:45	<p>Planning and designing of stirring and mixing technology for digesters, mixing pits and storages</p> <p><i>Andreas KRONBERG, Propeller Technik Maier GmbH, Mindelheim, Germany</i></p>
12:15	Lunch
13:30	<p>Biogas specific building materials for sustainable plant operation</p> <ul style="list-style-type: none"> • Design and suitability • Corrosion and operating conditions • Reliability and installation <p><i>Erwin KÖBERLE, Biogaskontor Köberle GmbH</i></p>
15:00	Coffee break
15:15	Day to day maintenance

	<ul style="list-style-type: none"> • Duties of the operator • Data recording • General maintenance • Minor repairs • Digestion biology with control instruments and feeding management <p><i>Erwin KÖBERLE, Biogaskontor Köberle GmbH, Obermarchtal</i></p>
16:45	Discussion
17:00	End of the day

Tuesday, April 28th – Practical Plant Operation

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</i></p>
10:30	Coffee break
10:45	<p>Organic waste and fermentation technology – processes and biological stability</p> <ul style="list-style-type: none"> • Building materials • Operational requirements <p><i>Bernhard NATTERER, Finsterwalder Umwelttechnik GmbH, Bernau</i></p>
12:15	Lunch
13:30	<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>Birgit PFEIFER, Schaumann BioEnergy Consult GmbH, Pinneberg</i></p> <p>Short travel by coach Meeting point: parking area in front of “SHMT” Meeting time: 1:30pm Departure: 1:45pm</p>
17:00	End of the day

Wednesday, April 29th – Practical Plant Operation

09:00	<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</i></p>
10:30	Coffee break
10:45	<p>Cogeneration to heat and power – Gas utilisation</p> <ul style="list-style-type: none"> • Differences between injection and gas engine • Generator and controlling • Design principles and effectiveness <p><i>Andre BANKEN, 2G Energietechnik GmbH</i></p>
12:15	Lunch
13:30	<p>Measurement and data recording for optimization, stabilization and enhancement of the biogas process</p> <ul style="list-style-type: none"> • Gas analysis related to the metabolic pathway • Application area for gas analysis devices • Application of further measured variables, controlling and supervisory control <p><i>Torsten HAUG, Union Instruments GmbH</i></p>
14:30	Coffee break
14:45	<p>Closing with a visit at the laboratories of the University</p> <p><i>Dr. Andreas LEMMER, State institute of Agricultural Engineering and Bioenergy, University of Hohenheim</i></p>
15:45	Discussion
16:00	Handout of the certificates and end of the event.

Program is subject to change



Event organized by IBBK and the State Institute of Agricultural Engineering and Bioenergy, University of Hohenheim, Stuttgart, Germany

