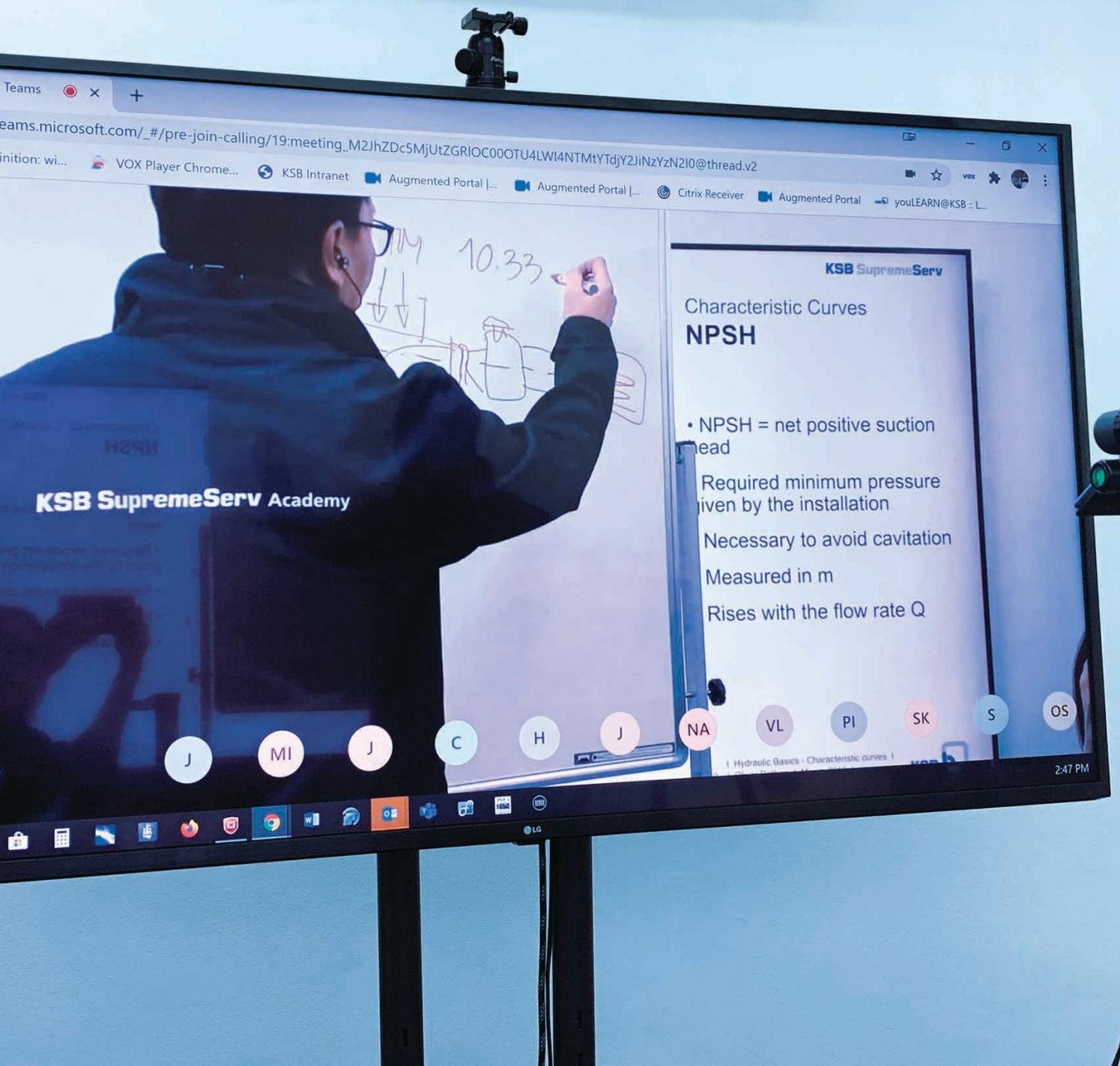


## For Your Success

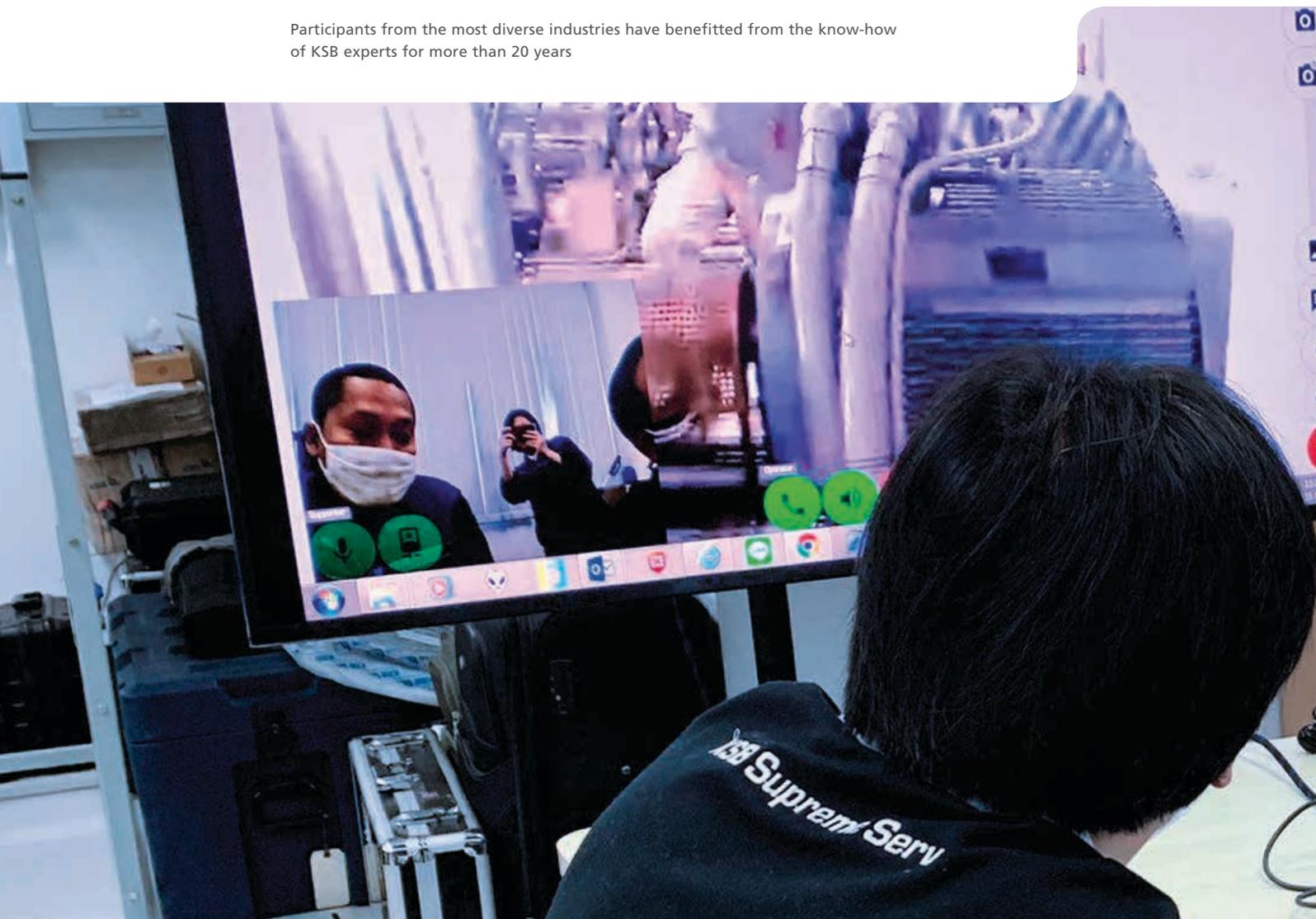
## KSB Trainings 2020 / 2021



[www.ksb.com/ksb-th-en/Products\\_and\\_Services/training/course-registration](http://www.ksb.com/ksb-th-en/Products_and_Services/training/course-registration)

Please refer to our website for a complete overview of our online seminar series, current training and online registration form

Participants from the most diverse industries have benefitted from the know-how of KSB experts for more than 20 years



# Overview

## Technical Seminar Program Series

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<b>IS</b> Seminar Series “Pumps in Industry, Water and Wastewater Engineering”	10
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Keeping a cool head – with KSB pumps in the Abu Dhabi district cooling plant

# GS

## Centrifugal Pumps and System Engineering

Our seminar program series on “Centrifugal Pumps and System Engineering” offers you the opportunity to deepen your basic knowledge of how centrifugal pumps work.

<b>GS 01/02</b>	Selecting centrifugal pumps, operating a pumping station	6
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### District cooling plant Abu Dhabi, UAE:

The capacity of the Abu Dhabi cooling plant exceeds 158,000 kW, maintained by ten Omega, nine RDLO, three Etanorm and two Movitec pumps, among others. Customer service is also ensured, with KSB Service LLC in Abu Dhabi providing the following services: spare parts, repair and maintenance of all types of pumps and valves for industrial applications and the water and wastewater industry  
[www.ksb.com/references](http://www.ksb.com/references)

## GS 1/2

### Selecting Centrifugal Pumps, and Operating Pumping Stations

**Seminar objectives:** Participants will know how centrifugal pumps work (especially for fluids without solid content) and be able to make an optimum selection. They will be able to safely assess system operating behaviour and have awareness of various operating limits. Participants will know about the measurement methods used to determine flow characteristics and how to prevent measurement errors.

**Participants:** Engineers, technicians and foremen in planning, system engineering, operation and service. Participants should be familiar with working with diagrams and technical/scientific calculators.

#### Content:

- Reliable operation of pumping stations, centrifugal pump selection
- Physical processes of centrifugal pumps, pump characteristic curves
- Flow rate, head, NPSH, shaft power and drive rating  
Specific speed, impeller types, forces
- Determining a suitable pump size, operating limits
- Cavitation and its effects
- Design details, main components of centrifugal pumps  
Single-stage and multistage pumps
- Pump types, installation location, installation
- Parallel and series operation of centrifugal pumps
- Group work at the training test stand
- Determining system characteristic curves
- Interaction between pump and system
- Measuring relevant pump system operating data and standards for measurement acceptance
- Measuring characteristics for supervision of operation  
Practice examples: selecting pumps in groups

#### In brief

Date	2 days – upon request
Minimum	10 participants
Start/end	Day 1, 09:00 – Day 2, 17:00 (approx.)
Place	Upon request (in-house/KSB TH)
Cost	\$ 400.00 plus VAT (without accommodation costs)
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## GS 03

### Hands-on: Hands-on: Shaft Seals in Centrifugal Pumps

**Seminar objectives:** Participants will gain well-founded knowledge of shaft seals (and their limits) in centrifugal pumps. This enables them to professionally handle these sealing techniques.

**Participants:** Operation and maintenance staff involved with centrifugal pump systems.

#### Content:

- Sealing rotating shafts of centrifugal pumps with gland packings and single mechanical seals
- Designing the details of these shaft seals
- Interaction between the pump and mechanical seal
- Fields of application, application limits
- Damage (examples of damaged parts) and causes of such damage

#### In brief

Date	1 day – upon request
Minimum	10 participants
Start/end	09:00 – 17:00 (approx.)
Place	Upon request (in-house/KSB TH)
Cost	\$200.00 plus VAT (excluding accommodation costs)
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## GS 04

### Vibrations and Noise in Pumps and Systems

**Seminar objectives:** Participants will gain basic knowledge of vibrations and noise in pumps and systems. This will enable them to recognize potential faults or operating statuses and take prompt remedial action.

**Participants:** Engineers, technicians and foremen in planning, system engineering, operation and service.

**Content:**

- Vibrations in centrifugal pumps, recording and evaluating
- Measuring and measurement procedures, implementation and evaluation criteria
- Examples; condition-oriented machinery maintenance
- Technical acoustics: basics, terms and definitions, characteristic values, sound measurement, evaluating measurement results, applicable regulations
- Machinery noises; causes of noise in pumps, electric motors, valves, piping
- Noise reduction: primary and secondary measures
- Practical simulation and demonstration of the FFT spectrum from improper installation and operation
- Vibration isolation

**In brief**

Date	1 day – upon request
Minimum	10 participants
Start/end	09:00 – 17:00 (approx.)
Place	Upon request (in-house/KSB TH)
Cost	\$200.00 plus VAT (excluding accommodation costs)
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## GS 05

### Materials and Corrosion

**Seminar objectives:** Participants will gain comprehensive knowledge on the optimized selection of materials, depending on each specific case. When planning, selecting and operating pumps, participants will be able to confidently select the right material based on requirements and cost.

**Participants:** Engineers, technicians and foremen in planning, system engineering, operation and service with basic knowledge of material engineering.

**Content:**

- Metallic and non-metallic materials used by KSB
- Hydroabrasion, erosion, cavitation
- Welding
- Mechanical-technological properties, inspection/test methods
- Types of corrosion
- Hydrochemistry; types of treatment, additives
- Fluids handled /Fluids handled/material selection criteria

**In brief**

Date	1 day – upon request
Minimum	10 participants
Start/end	09:00 – 17:00 (approx.)
Place	Upon request (in-house/KSB TH)
Cost	\$200.00 plus VAT (excluding accommodation costs)
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## GS 06

### Energy Efficiency in Pumping Hydraulic Systems

**Seminar objectives:** Participants will gain technical knowledge of the interaction between pumps, valves and piping as well as their interdependence and influence on each other.

**Participants:** Engineers, technicians and foremen in planning, system engineering, operation and service with basic theoretical knowledge.

**Content:**

- Hydraulic systems and related tasks
- Different types of systems
- Hydraulic grade lines as a tool for illustrating the processes in hydraulic systems
- Main components of hydraulic systems, their characteristics and their characteristic properties
- Determining the required heads: geodetic head differences, dynamic losses in the lines, station losses
- Design of resistance lines
- Parallel operation diagrams and hydraulic grade lines as tools for project planning (recognising / preventing weak points in the system in the planning phase)
- Analysis – what tools should be used for optimum analysis of the system?
- Selection – how can optimum selection save energy costs and increase the service life of pumps and valves?
- High-efficiency drives – a new opportunity to save energy by using synchronous motors in part load operation
- High-efficiency drives – a new opportunity to save energy by using synchronous motors in part load operation
- Demand-driven operation explained

**In brief**

Date	2 days – upon request
Minimum	10 participants
Start/end	Day 1, 09:00 – Day 2, 17:00 (approx.)
Place	Upon request (in-house/KSB TH)
Cost	\$400.00 plus VAT (excluding accommodation costs)
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## GS 09

### Surge pressure in pumping stations

**Seminar objectives:** Participants will be familiar with the pressure changes and surges in liquid transport systems. They will be able to confidently assess different types of valves and their influence on system behaviour. Participants will understand the physical relationships and be able to assess surge pressure issues in the piping systems of pumping stations. They will be able to initiate or take suitable measures to prevent harmful pressure surges.

**Participants:** Engineers and technicians in planning, system engineering and operation.

**Content:**

- Use of shut-off valves, check valves and control valves of different designs in liquid transport systems
- Influence of pumps and valves on the piping dynamics (e.g. surge pressure)
- Occurrence and effect of dynamic pressure fluctuations and pressure surges in pump systems
- Design and function of the most commonly used surge pressure prevention equipment

**In brief**

Date	2 days – upon request
Start/end	Day 1, 09:00 – Day 2, 17:00 (approx.)
Place	Upon request (in-house/KSB TH)
Cost	400.00 plus VAT (excluding accommodation costs)
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com





Clear water for the Baltic Sea: Europe's deepest waste water pumping station

# IS

## Pumps in Industry, Water and Wastewater Engineering

Our seminar program series "Pumps in Industry, Water and Wastewater Engineering" provides know-how on the optimum use and selection of hydraulic systems, seals, commissioning, servicing, installation and dismantling of pumps in industry, process engineering or wastewater treatment plants.

- |              |                                                               |           |
|--------------|---------------------------------------------------------------|-----------|
| <b>IS 01</b> | <b>Pump know-how for wastewater transport and engineering</b> | <b>12</b> |
| <b>IS 02</b> | <b>Pump know-how for process engineering</b>                  | <b>12</b> |
| <b>IS 04</b> | <b>Pump know-how for industrial engineering</b>               | <b>13</b> |



A Waste water pumping station St. Petersburg, Petersburg, Russia: With 19 Amarex KRT pumps including control systems and frequency inverters, KSB contributes to the continuous treatment of up to 98% of today's wastewater from a multi-million metropolis in the Baltic Sea. [www.ksb.com/references](http://www.ksb.com/references)

## IS 01

### Pump Know-how for Wastewater Transport and Engineering

**Seminar objectives:** Participants will be able to confidently select and operate pumps for wastewater transport and engineering. They will also gain some knowledge of hydraulic systems, seals and typical damage.

**Participants:** Pump mechanics and foremen in general industry and wastewater engineering.

**Content:**

- Basics of centrifugal pump hydraulic systems
- Selection and operating behaviour of centrifugal pumps
- How to service shaft seals
- Design and installation details of centrifugal pumps
- Pump damage and preventive measures
- Hands-on training in groups:
- A: Submersible motor pumps (KRT/Amarex)
- B: Dry-installed centrifugal wastewater pumps (Sewatec)

**In brief**

Date	2 days – upon request
Minimum	10 participants
Start/end	Day 1, 09:00 – Day 2, 17:00 (approx.)
Place	Upon request (in-house/KSB TH)
Cost	\$400.00 plus VAT (excluding accommodation costs)
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## IS 02

### Pump Know-how for Process Engineering

**Seminar objectives:** Participants will be able to confidently select and operate pumps for process engineering. They will also gain some knowledge of hydraulic systems, seals and typical damage.

**Participants:** Pump mechanics and foremen in the chemical industry and process engineering.

**Content:**

- Basics of centrifugal pump hydraulic systems
- Selection and operating behaviour of centrifugal pumps
- Mechanical seals: design, function, typical damage
- Design details of centrifugal pumps
- Pump damage and preventive measures
- Commissioning centrifugal pumps
- Servicing centrifugal pumps
- Hands-on training in groups:
- A: single-stage standardised chemical pump (MegaCPK),
- B: Sealless pumps (Magnochem, Secochem Ex)
- Multistage high-pressure ring-section pumps (Multitec)

**In brief**

Date	3 days – upon request
Minimum	10 participants
Start/end	Day 1, 09:00 – Day 3, 17:00 (approx.)
Place	Upon request (in-house/KSB TH)
Cost	\$600.00 plus VAT (excluding accommodation costs)
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## IS 04

### Pump Know-how for Industrial Engineering

**Seminar objectives:** Participants will be able to confidently select and operate pumps for industrial engineering. They will also gain some knowledge of hydraulic systems and shaft seals.

**Participants:** Pump mechanics and foremen involved in industry and wastewater supply.

**Content:**

- Basics of centrifugal pump hydraulic systems
- Selection and operating behaviour of centrifugal pumps
- Commissioning and maintenance information
- Design details of centrifugal pumps
- A: Single-stage centrifugal pumps (Etanorm, Etanorm SYT, Etabloc, Etachrom, Etaprime)
- B: Sealless centrifugal pumps (Etaseco, Etamagno SY)
- C: Multistage high-pressure ring-section pumps (Movitec, Multitec)
- Pump damage and preventive measures

**In brief**

Date	2 days – upon request
Minimum	10 participants
Start /end	Day 1, 09:00 – Day 2, 17:00 (approx.)
Place	Upon request (n-house/KSB TH)
Cost	\$400.00 plus VAT (excluding accommodation costs)
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com



Beyond providing you with innovative products, KSB also works with you to ensure optimum product use in your systems.



# Online Seminar Program Series 13 - 17 July 2020

RS – Reliability Service – Centrifugal Pump's Operational

**KSB SupremeServ Academy**





## RS Pumps' Operational Availability & Reliability

Our **online seminar program series** on Centrifugal Pump's Operational Availability & Reliability will give you the opportunity to deepen your specialist knowledge of the centrifugal pump function.

<b>RS 01</b>	Safe and Reliable Operation of Pump Systems	16
<b>RS 02</b>	Ten Frequent Failure Modes and Effects Analysis	16
<b>RS 03</b>	Integrated Digitalization KSB TPM	16
<b>RS 04</b>	Standardized Erection and Installation from ETNY to HG	17
<b>RS 05</b>	FluidFuture: SES – Life Cycle Cost Optimization	17

## RS 01

### Safe and Reliable Operation of a Pump System

**Online seminar objectives:** Participants will understand the hydraulic effect and behaviour of centrifugal pumps as well as the selection process to optimize the operation and improve reliability.

**Participants:** Engineers, technicians and foremen involved in planning, system engineering, operation and service. Participants should be familiar with diagrams and technical/scientific calculators.

**Content:**

- What the pump's characteristic curve tells us and how to select a safe and reliable pump
- NSPH and pump suction – how deep can a pump suck?
- Five potential root causes of the cavitation phenomena in centrifugal pumps
- System curve understanding and basic system curve calculation
- Single and multi-pump operation with system curve change

**In brief**

Date	2 hours – upon request
Minimum	7 participants
Start/end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## RS 02

### Modes and Effects Analysis – 10 Frequent Failures

**Online seminar objectives:** Participants will learn to understand the 10 most frequent failure modes and apply their logical analysis skills and knowledge as a “Swiss Army Tool Kit” to their future work.

**Participants:** Operation and maintenance staff involved in centrifugal pump systems.

**Contents:**

- 10 ways to murder a pump!

**In brief**

Date	2 hours – upon request
Minimum	7 participants
Start/end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## RS 03

### Integrated Digitalized KSB TPM

**Online seminar objectives:** Participants will learn the fundamentals of KSB's unique Total Pump Management (TPM) concept and understand the integration of the advanced digitalized KSB Guard into KSB TPM to optimize the operational costs and reliability for plant customers.

**Participants:** Engineers, technicians and foremen involved in planning, system engineering, operation and service with basic knowledge of maintenance engineering.

**Contents:**

- KSB TPM fundamentals
- KSB digitalized TPM features and concept
- Introduction to KSB Guard
- What is the difference between IEC and ISO vibration standards?

**In brief**

Date	2 hours – upon request
Minimum	7 participants
Start/end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## RS 04

### Standardized Erection, Installation from ETNY to HG

**Online seminar objectives:** Participants will learn about the most successful standardized procedures for the erection, installation and commissioning of two different pump types which they can apply to any pump type in the future.

**Participants:** Engineers, technicians and foremen in planning, system engineering, operation and service with basic knowledge of erection and installation.

#### Contents

- Erection, installation and commissioning procedures of ETNY pumps
- Erection, installation and commissioning procedures of HG pumps

#### In brief

Date	2 hours – upon request
Minimum	7 participants
Start/end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## RS 05

### FluidFuture: SES – Life Cycle Cost Optimization

**Online seminar objectives:** Participants will learn how centrifugal hydraulic pumps work (for liquid) including their optimal selection, operation, measurement, parameters and tips for avoiding measurement errors. They will also be able to safely assess system operating behaviour and performance limits to optimize the performance, efficiency and reliability of centrifugal pumps.

**Participant:** Engineers, technicians and foremen involved in planning, system engineering, operation and service with basic theoretical knowledge.

#### Content:

- Life cycle cost concept
- How to measure and the measurements required
- Case study on the MBK Center, Bangkok Thailand: Assumption and system analysis logic
- Case study on the fountain pump system in Chiang Mai, Thailand: “Don’t look down 4.5 kW pumps”

#### In brief

Date	2 hours – upon request
Minimum	7 participants
Start/end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com





**PS****Centrifugal Pump Engineering Service – Season 1**

Our **online seminar program series** on “Centrifugal Pump Engineering Service” will give you the opportunity to improve your competency and performance, including a root cause failure analysis of centrifugal pumps with a solution provided for improvement and optimization.

<b>PS 01</b>	<b>Mechanical Seal Operation</b>	<b>20</b>
<b>PS 02</b>	<b>KSB Retrofitting Material for Corrosion and Erosion</b>	<b>20</b>
<b>PS 03</b>	<b>In Situ Performance Test, Grades and Tolerance Acceptance</b>	<b>20</b>
<b>PS 04</b>	<b>Hydraulic Institute Standard – Pump Intake Design</b>	<b>21</b>
<b>PS 05</b>	<b>FluidFuture: PumpMeter and PumpDrive II</b>	<b>21</b>



KSB is one of the world's leading manufacturers of pumps and valves, providing a comprehensive range of services.

Additionally, KSB has built up an extensive portfolio of mechanical seals in order to provide customers with perfect fitting solutions for KSB pumps.

## PS 01

### Mechanical Seal Operation

**Online seminar objectives:** Participants will understand the application and application limit of the mechanical seal throughout the damages and causes of damages with analysis methods.

**Participants:** Engineers, technicians and foremen involved in planning, system engineering, operation and service.

**Content:**

- Mechanical seal standards, applications and application limit
- KSB Mechanical seal flushing plan on KSB pumps' BFW pumps e.g. HGM, H-DA, HGC
- KSB Mechanical seal flushing plan on KSB pumps' API pumps e.g. RPH, RPHV, RPHb

**In brief**

Date	2 hours – upon request
Minimum	7 participants
Start/end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## PS 02

### KSB Retrofitting Material for Corrosion and Erosion

**Online seminar objectives:** Participants will gain comprehensive knowledge on the optimized selection of material, according to each specific case. When planning, selecting and retrofitting material, participants will be more confident in selecting the correct material.

**Participants:** Operation and maintenance staff involved in centrifugal pump systems.

**Content:**

- Metallic and non-metallic material used by KSB
- Hydro-abrasion, corrosion and erosion
- Material selection of KSB's BFW pumps e.g. MTC, HGM, H-DA, HGC
- Material selection of KSB's API pumps e.g. RPH, RPHV, RPHb
- Fluid handled/selection criteria for material used in the rotating shafts of centrifugal pumps with gland packing and single mechanical seals

**In brief**

Date	2 hours – upon request
Minimum	7 participants
Start/end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## PS 03

### In Situ Performance Test, Grades and Tolerance Acceptance

**Online seminar objectives:** Participants will go through the ISO 9906 rotor dynamic – hydraulic performance acceptance grades 1, 2 and 3 and be able to understand the limitations of the in situ performance test in comparison to the ISO 9906 standardized test bed.

**Participants:** Engineers, technicians and foremen involved in planning, system engineering, operation and service.

**Content:**

- ISO 9906 Performance grade and tolerance acceptance
- ISO 9906 Pump test on a standardized installation
- In situ performance instrumentation and limitations

**In brief**

Date	2 hours – upon request
Minimum	7 participants
Start/end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## PS 04

### Hydraulic Institute Standard – Pump Intake Design

**Online seminar objectives:** Participants will learn about the standard intake/or suction pipe configuration to identify the causes of improper suction pipe design and discuss the potential reduction in reliability and availability with experts to find a solution for improvement and optimization.

**Participants:** Engineers, technicians and foremen involved in planning, system engineering, operation and service with basic knowledge of engineering materials.

**Content:**

- Hydraulic Institute standard on pump intake design
- The most common suction design mistakes that shorten the lifespan of a pump and its components

**In brief**

Date	2 hours – upon request
Minimum	7 participants
Start /end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## PS 05

### FluidFuture: PumpMeter and PumpDrive II

**Online seminar objectives:** Participants will understand the advantages of the PumpMeter and PDII over the ordinary VSD/VFD converters on the market and provide solutions for improving and optimizing the reliability and energy efficiency of the system.

**Participants:** Engineers, technicians and foremen involved in planning, system engineering, operation and service with basic theoretical knowledge.

**Content:**

- FluidFuture concept
- PumpMeter and its ability
- PumpDrive II and why it prefers the PumpMeter
- Understanding various control methods and the benefits of parameterization in hydraulic systems and related tasks

**In brief**

Date	2 hours – upon request
Minimum	7 participants
Start/end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com





**PS****Centrifugal Pump Engineering Service – Season 2**

Our **online seminar program series** on “Centrifugal Pump Engineering Service” will give you the opportunity to improve your competency and performance, including a root cause failure analysis of centrifugal pumps with a solution provided for improvement and optimization.

<b>PS 06</b>	<b>Mechanical Seal – Root Cause Failure Analysis</b>	<b>24</b>
<b>PS 07</b>	<b>PMI Material Analysis and Certification</b>	<b>24</b>
<b>PS 08</b>	<b>Reverse Engineering Workflow Process</b>	<b>24</b>
<b>PS 09</b>	<b>Pump’s Protecting Sensors and Monitoring Amacontrol III</b>	<b>25</b>
<b>PS 10</b>	<b>KSB Guards – Installation &amp; Operation Case Studies II</b>	<b>25</b>



KSB is one of the world’s leading manufacturers of pumps and valves, providing a comprehensive range of services.

Additionally, KSB has built up an extensive portfolio of mechanical seals in order to provide customers with perfect fitting solutions for KSB pumps.

## PS 06

### Mechanical Seal – Root Cause Failure Analysis

**Online seminar objectives:** Participants will understand the failure analysis mechanical seal throughout the damages and causes of damages with analysis methods.

**Participants:** Engineers, technicians and foremen involved in planning, system engineering, operation and service.

**Content:**

- RCFA – Root cause failure analysis of Mechanical seal
- RCFA – Root cause failure analysis of O – Ring

**In brief**

Date	2 hours – upon request
Minimum	7 participants
Start/end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## PS 07

### PMI Material Analysis and Certification

**Online seminar objectives:** Participants will gain comprehensive knowledge of how to identify the different materials and to understand the chemical composite and mechanical property properties of the material. When planning, selecting and retrofitting material, they will be more confident to select the right material.

**Participants:** Operation and maintenance staff involved in centrifugal pump systems.

**Content:**

- PMI definition and tools
- PMI in reverse engineering application

**In brief**

Date	2 hours – upon request
Minimum	7 participants
Start/end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## PS 08

### Reverse Engineering Workflow Process

**Online seminar objectives:** Participants will go through the process of reverse engineering and will be much more confident on our KSB experiences, knowledge and know-how.

**Participants:** Engineers, technicians and foremen involved in planning, system engineering, operation and service.

**Content:**

- Reverse engineering vs retrofitting definitions
- Reverse engineering process workflow
- Case studies in KSB SupremeServ Thailand

**In brief**

Date	2 hours – upon request
Minimum	7 participants
Start/end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## PS 09

### Pump's Protecting Sensors and Monitoring Amacontrol III

**Online seminar objectives:** Participants will learn the protecting sensors and monitoring instrumentations that can improve and optimize the operational reliability of the centrifugal pumps and their systems.

**Participants:** Engineers, technicians and foremen involved in planning, system engineering, operation and service with basic knowledge of engineering materials.

**Content:**

- Protecting sensors in centrifugal pumps
- KSB Amacontrol III for dry pit pumps and submersible motor pumps

**In brief**

Date	2 hours – upon request
Minimum	7 participants
Start /end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com

## PS 10

### KSB Guard – Installation & Operation Case Studies II

**Online seminar objectives:** Participants will learn and understand the advantage and benefit of KSB Guard with the pump types and applications including installation, commissioning and operation.

**Participants:** Engineers, technicians and foremen involved in planning, system engineering, operation and service with well-founded theoretical basic knowledge.

**Content:**

- Components, features and applications
- Installation and commissioning workflow
- Case studies
- KSB Guard with KSB TPM Concept

**In brief**

Date	2 hours – upon request
Minimum	7 participants
Start/end	Upon request
Place	Online virtual classroom
Cost	\$ 100.00 plus VAT
Contact	suphara.apichit@ksb.com academy-bangkok@ksb.com







## Terms and conditions

1. To register, please either complete the form on our website [https://www.ksb.com/ksb-th-en/Products\\_and\\_Services/training/course-registration/](https://www.ksb.com/ksb-th-en/Products_and_Services/training/course-registration/) or contact us by e-mail at [academy-bangkok@ksb.com](mailto:academy-bangkok@ksb.com)
2. We will confirm your registration in writing. All registration applications will be considered on a first-come, first-served basis. Participant numbers are limited to ensure high-quality training. Approximately three weeks prior to the start of the training, participants will receive an invitation letter with all the necessary details.
3. The costs referred to are for each participant unless otherwise stated and include course materials and a participation certificate as well as catering during the day-time hours of the course. The course materials will be handed out during the training event. Please note that no reimbursement can be made for unused services. The training costs do not include the applicable value-added tax, accommodation, travel to and from the event, or transport between the hotel and training site. The training event will be invoiced following completion, and payment should be made within 14 days without deductions.
4. Cancellations must be made in writing. The cancellation fees depend on the time remaining before the start of the course:
 

■ 22 or more calendar days before the start of training:	0%
■ 21 or fewer calendar days before the start of training:	100%

 The cancellation fees represent the corresponding participation costs or daily fee plus any accommodation costs if charged to the KSB SupremeServ Academy. A replacement participant can be named at any time prior to the start of the training.
5. We reserve the right to make changes to the time and place or cancel a training event or parts thereof. In the case that a training event cannot proceed, participants will not be invoiced. Further claims are excluded.
6. If a training event is held in a room or on premises belonging to a third party, KSB shall not be liable for any accidents, loss or damage to the participants or property unless such damage was caused by (gross) negligence on the part of KSB or its employees.
7. The organizer shall not be liable for personal injury and damage to property (theft or similar) in connection with the implementation of a training event.
8. The training events will take place in the jurisdiction of Bangkok, Thailand.

**Your contact:**

For questions regarding the training concept and organisation

Suphara Apichit  
Tel. +662 988 2324 Ext. 315  
suphara.apichit@ksb.com  
academy-bangkok@ksb.com

For questions regarding the KSB SupremeServ Academy  
in Bangkok

Pichai Kridtanu  
Tel. +662 988 2324 Ext. 300  
pichai.kridtanu@ksb.com



**KSB Pumps Co., Ltd.**  
57 Moo 14, Suwinthawong road,  
Kratumrai, Nongjok, Bangkok,  
Thailand 10530