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Malaysian Water Academy Sdn Bhd

In Conjunction With



7 - 9 April 2026
Kuala Lumpur Convention Centre

3-DAY ADVANCED WATER ENGINEERING WORKSHOP SERIES

Enhance your technical capabilities through specialised training on pipeline modelling, hydraulic surge analysis, and advanced treatment plant design using CFD simulation & optimisation tools.

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BUNDLE PACKAGE
(Workshop 1 + Workshop 2)

MWA Member RM756
Non-Member RM972
(inclusive of 8% SST)



SBL KHAS

⚙️ Workshop 1

Advanced Hydraulic Surge & Pipe Stress Modelling in Pipeline Systems

7 April 2026 (Tuesday)
Hospitality Lounge Hall 4, KLCC
1:00 pm - 5:00 pm

Fees per participant (inclusive of 8% SST):
MWA Member: RM270 | Non-Member: RM378

⚙️ Workshop 2

Water & Wastewater Treatment Plant Design Using CFD Simulation & Design Optimization

8 - 9 April 2026 (Wednesday & Thursday)
Hospitality Lounge Hall 4, KLCC
9:00 am - 5:00 pm

Fees per participant (inclusive of 8% SST):
MWA Member: RM540 | Non-Member: RM648

IN COLLABORATION WITH



THE MALAYSIAN WATER ASSOCIATION
(Persatuan Air Malaysia)

No. 24, Second Floor, Jalan Sri Hartamas 8
Taman Sri Hartamas, 50480 Kuala Lumpur

FOR ENQUIRIES

Ms. Emi Dayana
Tel: 010-542 5124 / 03-6201 2250 / 6201 9521
emi@mwa.org.my

Workshop 1

Advanced Hydraulic Surge & Pipe Stress Modelling in Pipeline Systems

Date : 7 April 2026 (Tuesday)
Time : 1:00 pm - 5:00 pm
Venue : Hospitality Lounge Hall 4, Kuala Lumpur Convention Centre
Fee : MWA Member RM270 | Non Member RM378 (inclusive 8% SST)

Workshop Overview

This specialised technical workshop focuses on the analysis and modelling of hydraulic surge and pipe stress in pipeline systems, which are critical considerations in the design and operation of water transmission networks. Participants will gain practical insights into identifying surge conditions, evaluating pipeline stresses, and applying modelling techniques to improve system safety, reliability, and operational performance.

About the Trainer

Abolfazl Khalafi
GRP Engineering Technical Manager
Excel Pipes Sdn Bhd

Abolfazl Khalafi is an experienced water and environmental engineer with over 15 years of expertise in the design, simulation, and optimisation of water and wastewater infrastructure. His work includes irrigation systems, water transmission pipelines, sewer force mains, pumping stations, and treatment facilities. He specialises in hydraulic design, surge analysis, and pipeline system performance optimisation, and has led numerous projects from feasibility studies to detailed engineering design.

Currently, Abolfazl serves as the GRP Engineering Technical Manager at Excel Pipes Sdn Bhd in Kuala Lumpur and is pursuing a PhD in Environmental Engineering at Universiti Putra Malaysia. He holds Master's degrees in Hydraulic Structures Engineering and Environmental Engineering. He is also an active trainer and speaker at international water conferences, sharing expertise on pipeline systems, NRW reduction, and sustainable water infrastructure.

What You Will Learn

- ✓ Fundamentals of hydraulic surge and transient flow in pipelines
- ✓ Causes and impacts of pressure surges in water transmission systems
- ✓ Modelling techniques for surge analysis
- ✓ Pipe stress behaviour under transient hydraulic conditions
- ✓ Methods to mitigate surge risks and improve pipeline reliability

Who Should Attend

- ✓ Water Utility Engineers
- ✓ Pipeline Design Engineers
- ✓ Water Infrastructure Consultants
- ✓ Operation & Maintenance Engineers
- ✓ Water Industry Professionals

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Workshop Overview

This advanced technical workshop introduces participants to the application of Computational Fluid Dynamics (CFD) and optimisation tools in the design and improvement of water and wastewater treatment plants. Participants will learn how CFD simulation and AI-driven optimisation techniques can be used to analyse flow behaviour, improve treatment efficiency, and optimise plant design for better operational performance.

About the Trainer

Iman Zulhakim Bin Abdul Sidek Soh Thin Foo
MBOT: GT25110207
DRB Hicom University of Automotive Malaysia
Bachelor of Mechanical Engineering Technology (Honours)

Iman is an Application Engineer at Dazztech Solutions Sdn Bhd with experience in CFD-based simulation and design optimisation for water and wastewater infrastructure. He supports utilities and engineering consultants through technical training, simulation modelling, and engineering solutions.

His expertise includes modelling hydraulic and treatment processes using FLOW-3D HYDRO, covering aeration tanks, clarifiers, contact tanks, and flow distribution systems. He also applies pSeven optimisation tools to perform design exploration and multi-objective optimisation to improve treatment efficiency and plant performance.

What You Will Learn

- Fundamentals of WWTP design
- CFD modelling for treatment plant hydraulics
- Aeration and flow optimisation
- Using FLOW-3D HYDRO
- Design optimisation using pSeven

What You Will Gain

- Practical CFD modeling capability for WWTP designs
- Ability to evaluate and optimize plant layouts early in design
- Skills to diagnose hydraulic and operational problems
- Understanding of AI-driven optimization for improved plant performance
- Certificate of Completion

Who Should Attend

- ✓ Environmental Engineers
- ✓ Water & Wastewater Operators
- ✓ Process Engineers & Designers .
- ✓ Engineering Consultants
- ✓ Researchers & Students in Water/Environmental Studies

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Workshop 2

Training Programme

Day 1 Fundamentals + CFD & Optimization Overview

1. Water & Wastewater Treatment Fundamentals

- Water/Wastewater quality and process design basics
- Unit processes: screening to biological treatment & clarification
- Common WWTP challenges and failure modes
- Process bottlenecks: uneven flow, aeration inefficiency, sludge issues

2. Introduction to CFD & AI-Driven Optimization

- Introduction to 3D CFD for WWTP using FLOW-3D HYDRO
- Free-surface hydraulics, turbulence, mixing, particle settling
- When and why CFD adds value in design
- Introduction to pSeven for optimization & design exploration

Day 2 Hands-On CFD Simulation & Optimization

1. Hands-On with FLOW-3D HYDRO

- Model setup for flow splitting structures
- Meshing, boundary conditions, solver setup
- Aeration basin CFD modeling and mixing analysis
- Identifying dead zones, poor DO distribution & hydraulic imbalances

2. Hands-On with pSeven Optimization

- Importing CFD data
- DOE, surrogate modelling & sensitivity analysis
- Multi-objective optimization for improved WWTP design
- Optimizing baffles, diffusers, and inflow geometry

Workshop Highlights

- ✓ Fundamentals of Water & Wastewater Treatment Plant Design
- ✓ CFD Modeling for WWTP Design and Operational Troubleshooting
- ✓ Optimization for Flow Splitting & Aeration Efficiency
- ✓ Hands-on Training with FLOW-3D HYDRO and pSeven
- ✓ Real WWTP Case Studies and Practical Exercises

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