

## CURCULUM VITAE



### A. **PERSONAL DETAILS**

1. Name : Wei-Koon Lee
2. Date of Birth : 05 APR 1975 Place: KLANG
3. Sex : Male
4. Office Address : Faculty of Civil Engineering, University Teknologi Mara, 40450 Shah Alam, Selangor, Malaysia
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### B. **BRIEF PERSONAL HISTORY**

Obtained an academic degree (B.Eng) in Civil Engineering from University of Technology Malaysia (UTM), master degree (M.Eng) in Civil Engineering from Nanyang Technological University (NTU), Singapore, and DPhil degree (Engineering Science) from University of Oxford, UK.

Currently serving as an Associate Professor in the field of Water Resources and Environmental System (WRES) at Universiti Teknologi MARA, Malaysia. More than 10 articles have been accepted/published in ISI, SCOPUS, ERA journal outlets as well as 30 articles published in conference proceedings. Subject teaching includes:

- Fluid Mechanics
- Hydraulics & Hydrology
- Coastal Engineering

### C. **ACADEMIC QUALIFICATION**

No.	Name of Institution	Degree/Qualification	Date awarded
1.	Oxford	DPhil Engineering Science	2011
2.	NTU	M.Eng Civil	2002
3.	UTM	B. Eng (Hons) (Civil)	1999

D. **AREA OF EXPERTISE**

My research interest includes hydraulics, coastal engineering, environmental fluid mechanics, hydrology and water resources. My expertise is in numerical computation, with particular strength in modelling of shallow water environment, tidal estuary, density-stratified flow, Lagrangian transport, potential flow, and chaotic mixing.

E. **PUBLICATIONS**

*Journal papers:*

[ Q2 ] Bonar, P., Adcock, T.A. & **Lee, W.K.** (2018). Assessment of the Malaysian tidal stream energy resource using an upper bound approach. J. Oc. Eng. Marine Energy, 4(2), 99-109.

Othman, Z., Wahid, M.A., **Lee, W. K.**, Abdullah, J., Hamid, K.A. & Kamal, N.A. (2018). Detection of drug residues in Kerayong River, Kuala Lumpur. J. Fund. Appl. Sci. Vol. 10(6S), 570-581.

Mohamad, I.N. & **Lee, W.K.** (2018). Investigation of tidal backwater effect in an estuary with idealised meandering river. J. Fund. Appl. Sci. Vol. 10(6S), 658-668.

[ Q3 ] Mohamad, I.N., **Lee, W. K.** (2017). An idealized meandering river model for tidal backwater study. ARPN J. Eng. Appl. Sci., 12(10), 3208-3213.

[ Q3 ] Ahmad Jamalluddin, M.I. & **Lee, W.K.** (2016). Advection and dispersion of water quality constituents in Batu Ferringhi Penang. Pertanika J. Sci. Tech., Vol. 25(S), 103-114.

[ Q1 ] **Lee, W.K.** & Tuan Resdi, T.A. (2016). Simultaneous hydrologic prediction at multiple gauging stations using NARX network for Kemaman catchment, Terengganu, Malaysia. Hydrol. Sci. J. DOI: 10.1080/02626667.2016.1174333

Shin, E., **Lee, W.K.** & Abd Wahid, M. Investigation of local hydraulic dynamics in clearwell using an internal short-circuiting estimation method. Global Conf. Eng. Tech. (GCOET), 1-2 Jun 2016, KL. Aquatic Sc. Tech. In press.

Shin, E., **Lee, W.K.** & Abd Wahid, M. Application of internal short-circuiting estimation method on the investigation of local hydraulic

dynamics in modified clearwell. Global Conf. Eng. Tech. (GCOET), 1-2 Jun 2016, KL. Aquatic Sc. Tech. In press.

**Lee, W.K.**, Denis, J., Aha, S.N. & Abd Wahid, M. (2015). Spatial & temporal water quality variations due to point source pollution: An assessment on the effect of industrial discharge from HICOM, Shah Alam on Klang River. Int. J. Chem. & Environ. Eng., Vol 6(6), 410-415, WARP.

**Lee, W.K.** & Zaharuddin, N.A. (2015). Lagrangian investigation on the compound effects of reclamation and proposed tidal barrage to the environmental flow. J. Eng. (27), 71-80, UKM.

[ Q3 ] Othman, Z., Abd Wahid, M., **Lee, W. K.**, Mohamed Basri, Z.D. (2016). Water quality observation on Johor River Estuary and East Tebrau Strait, Malaysia. Env. Civil Eng. Tech. Int. Conf. (ENVICET 2015), Krabi, Thailand, 1-3 Dec 2015. J. Teknologi., UTM.

[ Q1 ] **Lee, W.K.**, Borthwick, A.G.L. & Taylor, P.H. (2014). Wind-induced chaotic mixing in a two-layer density-stratified shallow flow. J. Hydraul. Res., 52(2), 219-227, IAHR.

[ Q3 ] **Lee, W.K.**, Borthwick, A.G.L. & Taylor, P.H. (2014). Tracer dynamics in two-layer density-stratified estuarine flow. Proc. ICE - Eng. Comput. Mech., 167(1), 41-49, ICE UK.

[ Q3 ] Mohamad, I.N. & **Lee, W.K.** (2014). Numerical and laboratory approach to the prediction of flood stage in lowland tidal river. Appl. Mech. Materials, Vol. 661, pp. 68-72.

Haron, N.F., Tahir, W., **Lee, W.K.** (2013). Extreme estuarine flooding leading to estuary transverse flow salinity intrusion. Int. J. Civil & Env. Eng. IJCEE-IJENS, 13(02), pp. 54-58.

**Lee, W.K.** (2012). Reliability of combined regional tidal power generation in Malaysia. Sustainability & Civil Eng. J., vol. 1(2), 53-63. FCE & UiTM Press.

[ Q1 ] **Lee, W.K.**, Borthwick, A.G.L. & Taylor, P.H. (2011). A fast adaptive quadtree scheme for a two-layer shallow water model. J. Comput. Phys., 230, 4848-4870.

[ Q1 ] **Lee, W.K.**, Taylor, P.H., Borthwick, A.G.L. & Chuenkhum, S. (2010). Vortex-induced chaotic mixing in wavy channels. J. Fluid Mech., 654, pp. 501-538, Cambridge.

**Lee, W.K.** (2007). Long-term tidal forecasting and hindcasting using QuickTIDE Tidal Simulation Package. *J. Inst. Engineers, Malaysia*, 68(2), pp. 58-64, IEM.

[ Q1 ] **Lee, W.K.** & Lo, E.Y.M. (2002). Surface penetrating flexible membrane wave barrier of finite draft. *Oc. Eng.*, 29, pp.1781-1804, Elsevier.

Lee, W.K.& Lo, E.Y.M. (2001). Water scattering by an array of vertical membrane barriers. *J. Inst. Engineers, Malaysia*, 62(4), pp. 69-78, IEM.

#### *Conference papers*

**Lee, W.K.** & Azmi, M.S.A. (2018). Physical tsunami modelling – a review of laboratory tsunami wave generation mechanism. 4<sup>th</sup> Int. Conf. Water Res. (ICWR) 2018. UNESCO IHP-VIII. IWA. (Abstract accepted)

Yong, N.S., Mohamad, I.N. & **Lee, W.K.** (2018). Experimental Studies on River Meander Planform Pattern. 4th Int. Conf. Sci. Social Res. (CSSR 2017).

Mohamad, I.N., **Lee, W. K.** (2016). An idealized meandering river model for tidal backwater study. *Proc. Int. Symp. Eng. Tech. (ISET)*, Kuala Terengganu, 17 Oct 2016. UiTM.

Husain, N.F.H., **Lee, W.K.** & Mohamad Khamsin, M.A.A. (2016). Simulation of Kelatan River using HEC-RAS. 6<sup>th</sup> Int. Symp. Tech. & Sustainability (ISTS2016), Yogyakarta, 4-12 Oct 2016. NIT Japan & Gadjah Mada Univ, Indonesia.

Mohamad, I.N., **Lee, W. K.**, May, R. (2016). Idealized river meander using improved sine-generated curve method. *Proc. Int. Civil & Infrastructure Eng. Conf. (InCIEC)*, Shah Alam, 21-22 Sep 2015. IIESM, UiTM, pp. 125-135, Springer.

Yahya, A., Abd Wahid, M. & **Lee, W.K.** (2015). Assessment of chlorine contact tank based on tank configuration and baffle factor. *Int. Symp. Flood Res. Manage. (ISFRAM 2015)*, Shah Alam, 5-6 Oct 2015. FCRC, UiTM.

Syariff Sa'aimon. S.M., **Lee, W.K.** & Abdul Rasid, N.S. (2015). Effectiveness of coconut shell activated carbon in removing heavy metals in wastewater. 5<sup>th</sup> Int. Symp. Tech. & Sustainability (ISTS2015), Shah Alam, 3-11 Aug 2015. NIT Japan & UiTM Malaysia.

Mohd Zahudi, M.S., **Lee, W.K.** & Azmie Chan, M.R.A. (2015). Estimation of flood loss using Geographic Information System (GIS). *5<sup>th</sup> Int. Symp. Tech. & Sustainability (ISTS2015)*, Shah Alam, 3-11 Aug 2015. NIT Japan & UiTM Malaysia.

Anal Patie, E.P., **Lee, W.K.** & Abdullah, A.N.A. (2015). Effectiveness of Moringa Oleifera in comparison with alum in raw water treatment process. *5<sup>th</sup> Int. Symp. Tech. & Sustainability (ISTS2015)*, Shah Alam, 3-11 Aug 2015. NIT Japan & UiTM Malaysia.

**Lee, W.K.** & Mohamad, I.N. (2014). An idealised model of meandering tidal river. *Regional Conf. Sc. Tech. Social Sc. (RCSTSS)*, Cameron Highland, 23-25 Nov 2014. UiTM Pahang. In: Yacob, N.A. (eds) (2016) *Regional Conf. Sc. Tech. Social Sc. (RCSTSS)*, pp. 113-121, Springer.

**Lee, W.K.** & Zaharuddin, N.A. (2014). Hydrodynamic investigation on the compound effects of reclamation work and proposed tidal barrage on Johor River estuary and East Tebrau Strait. *Int. Conf. Civil Eng. Building Materials (CEBM)*, Hong Kong, 23-24 Nov 2014. IASHT/ ISERC.

**Lee, W.K.** & Zaharuddin, N.A. (2014). Hydrodynamic model for the investigation of environmental flow in Johor River Estuary. In: Hassan, R. et al. (eds) (2015) *Proc. Int. Civil & Infrastructure Eng. Conf. (InCIEC)*, Kota Kinabalu, 28 Sep-1 Oct 2014. IIESM, UiTM, 373-386.

Tuan Resdi, T.A. & **Lee, W.K.** (2014). Neural network hydrological modeling for Kemaman catchment. In: Hassan, R. et al. (eds) (2015) *Proc. Int. Civil & Infrastructure Eng. Conf. (InCIEC), IEEE Symp. Business, Eng. & Indust. App. (ISBEIA)*, Kota Kinabalu, 28 Sep - 1 Oct 2014. IEEE, 359-372.

Haron, N.F., Tahir, W., Mohamad, I.N., **Lee, W.K.**, Abdullah, J. & Sheikh Aladin, N.A. (2014). Salinity Velocity Pattern in Estuary Using PIV. In: Abu Bakar, S.H., Tahir, W., Wahid, M.A., Mohd Nasir, S.R. & Hassan, R. (eds). *Proc. Int. Symp. Flood Res. Manage. (ISFRAM 2014)*, Kota Kinabalu, 28 Sep- 1 Oct, 2014, pp 221-243. FCRC, UiTM, Springer.

Haron, N.F., Tahir, W., **Lee, W.K.** & Sheikh Aladin, N.A. (2014). Investigation of salinity pattern in estuary using PIV. *Int. Post-graduate Sem. (IPGS)*, 25-26 Jun 2014, FCE, UiTM. FCE, IPSis, UiTM .

**Lee, W.K.** & Zaharuddin, N.A. (2013). Numerical solution of a dual-layer Kranenburg-type shallow water basin. *IEEE Symp. Business, Eng. & Indust. App. (ISBEIA)*, Kuching, 22-25 Sep 2013. IEEE.

**Lee, W.K.** & Tuan Resdi, T.A. (2013). Neural network approach to coastal high and low water level prediction. In: Hassan, R. et al. (eds), *Proc. Int. Civil & Infrastructure Eng. Conf. (InCIEC)*, Kuching, 22-25 Sep 2013, pp. 275-286. IIESM, UiTM, Springer.

**Lee, W.K.** & Mohamad, I.N. (2013). Flood economy appraisal: an overview of the Malaysian scenario. In: Hassan, R. et al. (eds), *Proc. Int. Civil & Infrastructure Eng. Conf. (InCIEC)*, Kuching, 22-25 Sep 2013, pp. 263-274. IIESM, UiTM, Springer.

**Lee, W.K.** & Zaharuddin, N.A. (2013). Numerical treatment of shallow water flow between dual-layer to single-layer domain. *Malaysia -Japan Civil & Env. Eng. Symp.*, IIQAM, UiTM, 19-20 Mac 2013. FCE,UiTM-KNCT-KU.

**Lee, W.K.** (2012). Occurrences of chaotic mixing: A preliminary investigation of Malaysian coastal water. *Proc. IEEE Colloq. Humanities, Sci. Eng. (CHUSER)*, Kota Kinabalu, 3-4 Dec 2012. DOI: 10.1109/CHUSER.2012.6504343, pp. 380-385. IEEE.

**Lee, W.K.** (2012). Long-term tidal forecasting using back-propagation neural network. *Malaysian Sci. Tech. Congress (MSTC)*, Kuala Lumpur, 19-21 Nov 2012. COSTAM.

**Lee, W.K.**, Borthwick, A.G.L. & Taylor, P.H. (2011). A two-layer tidal-exchange flow. *Numerical Methods for Hyperbolic Equations: Theory & Appl.*, Santiago de Compostela, Spain, 4-8 Jul 2011. University of Santiago de Compostela.

**Lee, W.K.**, Taylor, P.H., Borthwick, A.G.L. & Chuenkhum, S. (2010). Shed vortices in the wakes of wavy surfaces. In: Leweke, T. & Williamson, C.H.K. (eds.), *IUTAM Symp. Bluff Body Wakes & Vortex-Induced Vibrations, 6<sup>th</sup>*, Capri, 22-25 Jun 2010. Int. Union of Theo. & Appl. Mech.

**Lee, W.K.** (2009). Dynamics of vortical stirring near wavy surfaces. *From fast cars to slow flows over bluff bodies: Translating knowledge on separated fluid mechanics*, Imperial College of London, 29-30 Jun 2009. Imperial College of London.

**Lee, W.K.**, Borthwick, A.G.L. & Taylor, P.H. (2010). On mathematical balancing of a two-layer shallow flow model. *IAHR European Div. Congress, 1<sup>st</sup>*, Edinburgh, 4-6 May 2010. IAHR.

**Lee, W.K.** (2007). Back-propagation neural network for tidal data supplement in Sejingkat, Kuching. *Conf. Sci. Social Res. (CSSR)*, Sunway, 3-5 Jul 2007. IRDC, UiTM.

**Lee, W.K.** (2007). Statistical investigation of tidal power potential in Malaysia. *Conf. Sci. Social Res. (CSSR)*, Sunway, 3-5 Jul 2007. IRDC, UiTM.

**Lee, W.K.** (2006). Investigation of tidal power potential in Malaysia. *Int. Sem. Civil & Infrastructure Eng. (ISCIE)*, UiTM, 13-14 Jun 2006. FCE, UiTM.

**Lee, W.K.** (2006). Reliability of tidal power conversion in Malaysia. *Int. Conf. Energy for Sustainable Dev.: Issues & Prospects for Asia*, Phuket, Thailand, 1-3 Mar 2006. Asian Inst. of Tech., Thailand.

Lo, E.Y.M & **Lee, W.K.** (2000). Water scattering by a surface piercing membrane of finite extent. In: Goda, Y., Ikehata, M. & Suzuki, K. (eds.), *Proc. 4<sup>th</sup> Int. Conf. Hydrodynamics, Theory & Appl.*, Yokohama, Japan, 7-9 Sep 2000, pp. 717-722. IAHR.