ATHANASIOS ANGELOUDIS MENG, PhD

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Areas of EXPERTISE computational fluid dynamics; coastal engineering; marine energy; tidal range energy; environmental impact assessment; water treatment; hydrodynamic lab experiments; water quality; fluid mechanics.

ACADEMIC APPOINTMENTS Current:

2018-Now Lecturer, University of Edinburgh

> School of Engineering, Institute for Infrastructure & Environment. Lecturer in Water Engineering for Civil Engineering applications.

Research Fellow, University of Edinburgh 2018-Now

> School of Engineering, Institute for Infrastructure & Environment. NERC/UKRI Research Fellow. Natural Environment Research Council - National Productivity Investment Fund Industrial Innovation Fellowship.

Previous:

2017-2018 Research Fellow, Imperial College London

> Dept of Earth Science and Engineering, Applied Modelling & Computation Group. NERC & Imperial College Research Fellow on the development of assessment and optimisation methods for marine energy

2016-2017 Research Associate, Imperial College London

> Dept of Earth Science and Engineering, Applied Modelling & Computation Group. EPSRC Impact Acceleration Projects and a fellowship award from an EPSRC platform (PRISM) for research in simulation methods.

Research Associate, Cardiff University 2014-2016

School of Engineering, Hydro-environmental Research Centre.

Research and project administration as part of MAREN2, a project funded by the

European Regional Development Framework (ERDF).

PhD, Hydro-environmental Engineering, Cardiff University Qualifications 2014

School of Engineering, Hydro-environmental Research Centre

2010 MEng, Civil Engineering, Cardiff University

School of Engineering, Second Class Honours - First Division

Awards

- NERC Industrial Innovation Fellowship NE/R013209/1 (2017) & NE/R013209/2 (2018)
- NERC Innovation Placement Award NE/R006733/1 (2017)
- CIWEM Welsh Branch Presentation Award (2015)
- 3rd place in the Institution of Civil Engineers Emerging Engineer Award (October 2015)
- Institution of Civil Engineers Wales Emerging Engineer Award (May 2015)
- Awards from the Hellenic Mathematical Society for the "Thales" competitions (2005,2006)

Funding & Contracts

Table 1. Research funding summary

Date	Source	Description		Value
2018	$NERC_{Edinburgh}$	Spatial & operational optimisation of tidal energy (PI)	£	274,003.00
2017	$NERC_{Imperial}$	Spatial & operational optimisation of tidal energy (PI)	£	80,272.00
2017	NERC	Eco-hydraulic impacts of tidal energy (PI) - Declined	£	$31,\!540.00$
2017	EPSRC_{PRISM}	Platform funding for computational research	£	14,000.00
2017	EPSRC_{IAA}	Optimising power generation from tidal lagoons (Co-I)	£	28,000.00
2016	EPSRC_{IAA}	Tidal lagoon operation simulation in Thetis (Co-I)	£	25,000.00
2014	ERDF_{MAREN2}	Modelling of marine renewable energy platforms	£	184,888.00
2011	CH2M-Cardiff	Numerical modelling of flow in contact tanks	£	9,600.00

 $IAA = \text{Impact Acceleration Account } \frac{\text{EP/K503733/1}}{\text{K503733/1}}, PRISM = \text{Platform: Underpinning Technologies for Finite Element Simulation } \frac{\text{EP/L000407/1}}{\text{EP/L000407/1}}, MAREN2 = \text{EU Atlantic Area project.}$

Table 2. Travel & Networking funding summary

Date	Source	Description		Value
2019	Newton Fund	UK-China coastal and ORE & extreme events workshop	£	1500.00
2019	$GCRF_{Edinburgh}$	Research network for energy and water in Central Asia	£	1500.00
2013	Cardiff Uni.	Travel grant for the 35 th IAHR World Congress	£	900.00

Teaching

Table 3. Lecturing & teaching experience

Period	Module	Summary	Hours
2018-19	UoE/CIVE10006 Hydraulic Engineering 4	10 Lectures, 5 Tutorials	15
2017-18	IC/SEF01a Marine Renewable Energy	1 Lecture	2
2017 - 18	KC/6SSG3061 Current Research in Geography	1 Lecture	2
2016-17	CU/EN3303 Water Engineering	8 Lectures, 9 Tutorials	30
2015 - 16	CU/EN4307 Coastal & Estuarine Engineering	3 Tutorial Sessions	12
2015 - 16	CU/EN3309 Engineering Design	4 Tutorial Sessions	16
2015 - 16	CU/EN1914 Professional Studies	8 Lab Demonstrations	40
2013 - 15	$\mathrm{CU/EN2306}$ Hydraulics	5 Tutorial Sessions	20
2013-14	CU/EN1027 Environmental Fluid Mechanics	3 Tutorial Sessions	6
2013 - 14	CU/EN3317 Environmental Hydraulics	4 Tutorial Sessions	8
2013-14	$\mathrm{CU}/\mathrm{EN1025}$ Drawing, Design, CAD B	2 Lectures, 8 Tutorials	34

UoE= University of Edinburgh (2019), IC= Imperial College London (2018), KC= King's College London (2017), CU= Cardiff University (2013-2017)

Table 4. Research project supervision

	Period	Name	Project	Co-Supervisor
РнD	2019-	A Fragkou	Wave-current interaction coastal modelling	V Venugopal
STUDENTS	2018-	L Mackie	Tidal range energy assessment and optimisation	MD Piggott
D				
Postgraduate	2017 - 18	M Clare	Suspended sediment transport in <i>Thetis (MRes)</i>	MD Piggott
STUDENTS	2017 - 18	F Harcourt	Operational optimisation of tidal lagoons (MSc)	MD Piggott
	2017 - 18	K Woods	Spatial arrangement of tidal lagoons (MSc)	MD Piggott
	2016 - 17	C Vouriot	Tidal lagoon vortex transport $(MRes)$	MD Piggott
	2015 - 16	N Viti	LES simulations of contact tank flow (MSc)	C Gualtieri
Undergraduate	2010 10	C C14:	M. J. III.	E Madina
	2018-19	S Speltoni	Modelling wave energy converters regionally (UROP)	
STUDENTS	2018-19	E Brazovskis	Modelling the Forth estuary hydrodynamics ($UROP$)	
	2018-19	J Guilloud	Bed shear stress effects by tidal infrastructure (MSci)	
	2017 - 18	R Tomkies	Tidal conditions and energy in the Thames $(MSci)$	MD Piggott
	2017 - 18	E Sessa	Vortical flow patterns in tidal power plants (Erasmus)	MD Piggott
	2017 - 18	N Hawkins	Twin basin operation modelling $(MSci)$	MD Piggott
	2017 - 17	A Zakon	Spatial optimisation of marine structures $(UROP)$	MD Piggott
	2017 - 17	W Scott	Modelling hydrodynamics in the Solent $(UROP)$	MD Piggott
	2017 - 17	G Decaud.	Tidal barrage design review and assessment $(UROP)$	MD Piggott
	2015 - 16	D Nugent	Development of a 1-D tidal flow model (1) $(MEng)$	R Falconer
	2015 - 16	D Neupauer	Development of a 1-D tidal flow model (2) $(MEng)$	R Falconer
	2014-15	A Patch	Energy from tidal impoundments using 0-D (<i>MEng</i>)	R Falconer
	2012 - 13	B Voorhees	Investigation of contact tank hydrodynamics (BEng)	T Stoesser
	2012-13	S Humphrey	Scouring effects around bridge piers $(MEng)$	T Stoesser

ACADEMIC ACTIVITIES

- Honorary and visiting positions
 - Academic Visitor. Earth Science & Engineering, Imperial College. (2018 Present).
 - Visiting Lecturer. Department of Geography, King's College London. (2017 2018).
 - Visiting Lecturer. Cardiff School of Engineering, Cardiff University (2016 -2017).
 - Honorary Research Associate. Hydro-environmental Research Centre, Cardiff University. (2016 2017).

• Academic committee member

- Committee Member. School of Engineering sabbatical committe, University of Edinburgh. (2019 - Present).
- Non-Examining Chair for doctoral examination committees, University of Edinburgh. (2019 Present).
- Committee member. Imperial College offshore renewables network (ICore), Imperial College London. (2017 2018).
- Postgraduate researcher representative. Cardiff IAHR Young professional Network, Hydro-Environmental Research Centre, Cardiff University. (2014 - 2015).
- President. Cardiff IAHR Student Chapter, Hydro-Environmental Research Centre, Cardiff University. (2010 - 2013).

• Editorial activities

 Guest editor. Special issue in "Advances in Environmental hydraulics" for Water (MDPI), 2019.

• Doctoral thesis examiner

- Monika J. Kreitmair. "Uncertainty quantification in tidal energy resource assessment". University of Edinburgh, 2019 (Internal Examiner).

• Journal manuscript reviewer

Applied Energy (Elsevier), Chemosphere (Elsevier), Energies (MDPI), Energy (Elsevier), Engineering Applications of Computational Fluid Mechanics (Taylor & Francis), Environmental Modelling & Software (Elsevier), Environmental Engineering Science (Mary Ann Liebert), Environmental Fluid Mechanics (Springer), Environmental Science & Technology (ACS), Geosciences (MDPI), International Journal of Green Energy (Taylor & Francis), International Journal of Marine Energy (Elsevier), Journal of American Water Works Association (AWWA), Journal of Environmental Engineering (ASCE), Journal of Hydroulic Engineering (ASCE), Journal of Hydroinformatics (IWA), Journal of Hydro-environment Research (Elsevier), Journal of Marine Engineering & Technology (Taylor & Francis), Marine Pollution Bulletin (Elsevier), Ocean Engineering (Elsevier), Proceedings of the ICE: Water Management (Thomas Telford), Renewable Energy (Elsevier), Water (MDPI), Water Research (Elsevier).

• Conference manuscript reviewer

European Wave and Tidal Energy Conference (2019), Renewable Energies Offshore (2018), European Wave and Tidal Energy Conference (2017), International Offshore and Polar Engineering Conference (2017), International Congress on Environmental Modelling and Software (2014).

Personal development courses PhD Supervisor Briefing - University of Edinburgh (2019), EPSRC grant writing - University of Edinburgh (2019), Diversity in the workplace training - University of Edinburgh (2018), Introduction to Laser Safety - Imperial College London (2017), Introduction to HPC - Imperial College London (2017), Fast Track To Fellowships - Cardiff University (2016), Grant Funding - Cardiff University (2013), Writing and Publishing your Research - Cardiff University (2013), Demonstrating/Lab based Teaching in the Sciences - Cardiff University (2011), Assessing Student Learning in the Sciences - Cardiff University (2011), Introduction to FORTRAN - Cardiff University (2010).

Professional Experience

- Coastal Modeller, Independent Consultant, Cardiff, UK. Hydro-environmental modelling and tidal energy (06/2016 08/2016).
- Civil Engineer Trainee. Angeloudis Consulting Engineers, Kavala, Greece. Flood protection scheme design (06/2009 09/2009).
- Civil Engineer Trainee. Angeloudis Consulting Engineers, Kavala, Greece. Water supply and drainage projects (06/2008 09/2008).
- Assistant Surveyor. Krikis Surveyors, Kavala, Greece. Surveying in construction sites (07/2007 09/2007).

Affiliations & International Profile

- Grantham Affiliate. Grantham Institute for Climate Change and the Environment,
- Member. European Geosciences Union (EGU),
- Chartered Civil Engineer. Technical Chamber of Greece (TEE),
- Graduate Member. Institution of Civil Engineers (ICE),
- Member. International Association of Hydro-environment Research (IAHR),
- Member. International Association of Hydrological Science (IAHS),
- Member. British Dam Society (BDS),
- Environment Partner. Chartered Inst. of Water and Environment Manag. (CIWEM).

JOURNAL ARTICLES

- 1. F. Harcourt, **A. Angeloudis**, and M. D. Piggott. "Utilising the flexible generation potential of tidal range power plants to optimise economic value". *Applied Energy* 237 (2019), pp. 873 –884. DOI: https://doi.org/10.1016/j.apenergy.2018.12.091.
- 2. **A. Angeloudis**. "Tidal range structure operation assessment and optimisation". *Dams and Reservoirs* 29.2 (2019), pp. 45-54. DOI: https://doi.org/10.1680/jdare.18.00042.
- 3. C. V. M. Vouriot, A. Angeloudis, S. C. Kramer, and M. D. Piggott. "Fate of large-scale vortices in idealized tidal lagoons". *Environmental Fluid Mechanics* 19.2 (2019), pp. 329–348. DOI: 10.1007/s10652-018-9626-4.
- 4. S. P. Neill, A. Angeloudis, P. E. Robins, I. Walkington, S. L. Ward, I. Masters, M. J. Lewis, M. Piano, A. Avdis, M. D. Piggott, G. Aggidis, P. Evans, T. A. Adcock, A. Židonis, R. Ahmadian, and R. Falconer. "Tidal range energy resource and optimization Past perspectives and future challenges". *Renewable Energy* 127 (2018), pp. 763 –778. DOI: https://doi.org/10.1016/j.renene.2018.05.007.
- 5. P. Ouro, B. Fraga, N. Viti, A. Angeloudis., T. Stoesser, and C. Gualtieri. "Instantaneous transport of a passive scalar in a turbulent separated flow". *Environmental Fluid Mechanics* 18.2 (2018), pp. 487–513. DOI: 10.1007/s10652-017-9567-3.
- 6. **A. Angeloudis**, S. C. Kramer, A. Avdis, and M. D. Piggott. "Optimising tidal range power plant operation". *Applied Energy* 212 (2018), pp. 680 –690. DOI: https://doi.org/10.1016/j.apenergy.2017.12.052.
- C. Gualtieri, A. Angeloudis, F. Bombardelli, S. Jha, and T. Stoesser. "On the Values for the Turbulent Schmidt Number in Environmental Flows". Fluids 2.2 (2017). DOI: 10.3390/fluids2020017.
- 8. M. Lewis, A. Angeloudis, P. Robins, P. Evans, and S. Neill. "Influence of storm surge on tidal range energy". *Energy* 122 (2017), pp. 25–36. DOI: 10.1016/j.energy.2017.01.068.
- 9. P. Ouro, C. A.M. E. Wilson, P. Evans, and A. Angeloudis. "Large-eddy simulation of shallow turbulent wakes behind a conical island". *Physics of Fluids* 29.12 (2017), p. 126601. DOI: 10.1063/1.5004028.
- 10. **A. Angeloudis** and R. A. Falconer. "Sensitivity of tidal lagoon and barrage hydrodynamic impacts and energy outputs to operational characteristics". *Renewable Energy* 114(A) (2017), pp. 337–351. DOI: 10.1016/j.renene.2016.08.033.
- 11. **A. Angeloudis**, T. Stoesser, C. Gualtieri, and R. A. Falconer. "Contact Tank Design Impact on Process Performance". *Environmental Modeling & Assessment* 21.5 (2016), pp. 563–576. DOI: 10.1007/s10666-016-9502-x.
- 12. **A. Angeloudis**, R. Ahmadian, R. A. Falconer, and B. Bockelmann-Evans. "Numerical model simulations for optimisation of tidal lagoon schemes". *Applied Energy* 165 (2016), pp. 522–536. DOI: 10.1016/j.apenergy.2015.12.079.

- 13. **A. Angeloudis**, R. Falconer, S. Bray, and R. Ahmadian. "Representation and operation of tidal energy impoundments in a coastal hydrodynamic model". *Renewable Energy* 99 (2016), pp. 1103–1115. DOI: 10.1016/j.renene.2016.08.004.
- 14. **A. Angeloudis**, T. Stoesser, R. A. Falconer, and D. Kim. "Flow, transport and disinfection performance in small- and full-scale contact tanks". *Journal of Hydro-Environment Research* 9.1 (2015), pp. 15–27. DOI: 10.1016/j.jher.2014.07.001.
- 15. **A. Angeloudis**, T. Stoesser, and R. A. Falconer. "Predicting the disinfection efficiency range in chlorine contact tanks through a CFD-based approach". *Water Research* 60 (2014), pp. 118–129. DOI: 10.1016/j.watres.2014.04.037.
- A. Angeloudis, T. Stoesser, D Kim, and R. A. Falconer. "Modelling of flow, transport and disinfection kinetics in contact tanks". Proc. ICE - Water Manag. 167.9 (2014), pp. 532–546. DOI: 10.1680/wama.13.00045.
- 17. W. B. Rauen, **A. Angeloudis**, and R. A. Falconer. "Appraisal of chlorine contact tank modelling practices". *Water Research* 46.18 (2012), pp. 5834–5847. DOI: 10.1016/j.watres.2012.08.013.

BOOK Chapters

1. R. A. Falconer, **A. Angeloudis**, and R. Ahmadian. "Modelling hydro-environmental impacts of tidal renewable energy projects in coastal waters". *Handbook of Coastal and Ocean Engineering*. 2nd ed. World Scientific, 2018.

Conference Proceedings

- 1. Z. Goes, M. D. Piggott, S. C. Kramer, A Avdis, A. Angeloudis, and C. J. Cotter. "Competition effects between nearby tidal turbine arrays optimal design for the Alderney Race". RENEW2018 Conference. Lisbon, 2018, pp. 1–8.
- 2. **A. Angeloudis**, N. Hawkins, S. C. Kramer, and M. D. Piggott. "Comparison of twin-basin lagoon systems against conventional tidal power plant designs". *RENEW2018 Conference*. Lisbon, 2018, pp. 1–8.
- 3. D. Coles, S. C. Kramer, M. D. Piggott, A. Avdis, and **A. Angeloudis**. "Optimisation of tidal stream turbine arrays within Alderney Race". *EWTEC2017 Conference*. Cork, 2017, pp. 1–10.
- P. B. Ouro, B. Fraga, N. Viti, A. Angeloudis, C. Gualtieri, and T. Stoesser. "CFD analysis and validation of a chlorine disinfection tank". 37th IAHR World Congress. Kuala Lumpur, 2017, pp. 1–9.
- 5. **A. Angeloudis**, M. D. Piggott, S. C. Kramer, A. Avdis, D. Coles, and M. Christou. "Comparison of 0-D, 1-D and 2-D models for tidal range energy resource assessments". *EWTEC2017 Conference*. Cork, 2017, pp. 1–9.
- 6. **A. Angeloudis** and R. A. Falconer. "Operation modelling of tidal energy lagoon proposals within the Bristol channel and Severn Estuary". *RENEW2016 Conference*. Lisbon, 2016, pp. 503–512.
- 7. **A. Angeloudis**, R. Ahmadian, R. A Falconer, and B. Bockelmann-Evans. "Combined Potential and Impacts of Tidal Lagoons Along the North Wales Coast". *36th IAHR World Congress*. The Hague, 2015, pp. 1–8.
- 8. **A. Angeloudis**, T. Stoesser, C. Gualtieri, and R. A. Falconer. "Effect of Three-Dimensional Mixing Conditions on Water Treatment Reaction Processes". *36th IAHR World Congress*. July. The Hague, 2015, pp. 1–7.
- 9. **A. Angeloudis**, R. Ahmadian, B. Bockelmann-Evans, and R. A. Falconer. "Numerical modelling of a tidal lagoon along the North Wales coast". *Renewable Energies Offshore* (RENEW2014) Guedes Soares (Ed.) ©. Lisbon, 2015, pp. 139–145.
- 10. **A. Angeloudis**, T. Stoesser, and R. A. Falconer. "Disinfection kinetics in CFD modelling of solute transport in contact tanks". 3rd IAHR Europe Congress. Porto, 2014, pp. 1–10.
- 11. **A. Angeloudis**, T. Stoesser, D. Kim, and R. A. Falconer. "CFD Study of Flow and Transport Characteristics in Baffled Disinfection Tanks". *35th IAHR Congress*. Chengdu, 2013, pp. 1–7.
- 12. **A. Angeloudis**, W. B. Rauen, and R. A. Falconer. "Disinfection Contact Tanks: Contemporary Design and Modelling Considerations". *2nd IAHR Europe Congress*. Munich, 2012, pp. 1–8.

Conference Abstracts

- 1. M. Kadiri, A. Angeloudis, M. D. Piggott, and H. Zhang. "Potential water quality impacts of a tidal lagoon in Swansea bay". EGU General Assembly Conference Abstract, 21, 15144. Vienna, 2019.
- 2. L. Mackie, A. Angeloudis, F. Harcourt, and M. D. Piggott. "Optimising the Income of a Fleet of Tidal Lagoons". Oxford Tidal Energy Workshop. University of Oxford, 2019.
- 3. S. Warder, S. C. Kramer, A. Angeloudis, C. J. Cotter, K. Horsburgh, and M. D. Piggott. "Application of Adjoint Methods to Storm Surge Sensitivity Analysis". SIAM Conference on Mathematical and Computational Issues in the Geosciences. Houston, Texas, US, 2019.
- 4. N. Barral, A. Angeloudis, S. C. Kramer, G. J. Gorman, and M. D. Piggott. "An anisotropic mesh adaptation approach for regional tidal energy hydrodynamics modelling". EGU General Assembly Conference Abstracts, 20, 19168. Vienna, 2018.
- 5. N. Barral, J. Wallwork, S. C. Kramer, A. Angeloudis, G. G. Gorman, and M. D. Piggott. "An anisotropic mesh adaptation framework for coastal simulations". Firedrake '18 Workshop Abstracts. Imperial College, London, 2018.
- 6. N. Barral, A. Angeloudis, S. C. Kramer, G. G. Gorman, and M. D. Piggott. "Tidal power plant modelling using anisotropic mesh adaptation in *Thetis*". Firedrake '18 Workshop Abstracts. Imperial College, London, 2018.
- 7. S. C. Kramer, T. Karna, L. Mitchell, **A. Angeloudis**, D. Ham, and M. D. Piggott. "*Thetis*, a coastal ocean model based on *Firedrake*". Firedrake '18 Workshop Abstracts. Imperial College, London, 2018.
- 8. **A. Angeloudis**, S. C. Kramer, N. Hawkins, and M. D. Piggott. "Tidal range energy: assessment, optimisation and continuous generation options". EGU General Assembly Conference Abstracts, 20, 16554. Vienna, 2018.
- 9. A. Angeloudis, P. Ouro, C. Gualtieri, and T. Stoesser. "Hydrodynamic and scalar transport modelling in disinfection contact tanks". 19th Biennial International Seminar on Water Resources and Environmental Management. University of Edinburgh, 2018.
- 10. S. C. Kramer, T. Karna, D. Coles, A. Angeloudis, A. Avdis, and M. D. Piggott. "Modelling the Coastal Zone using Thetis". IMUM 2017 Workshop Abstracts. Stanford, 2017.
- 11. M. J. Lewis, **A. Angeloudis**, P. E. Robins, P. S. Evans, and S. P. Neill. "Storm surge and tidal range energy". EGU General Assembly Conference Abstracts, 19, 254. Vienna, 2017.
- 12. **A. Angeloudis**, D. Coles, S. C. Kramer, and M. D. Piggott. "Applications of *Thetis*: Tidal energy resource assessment and optimisation". Firedrake '17 Workshop Abstracts. Imperial College, London, 2017.
- A. Angeloudis, R. A. Falconer, and B. Bockelmann-Evans. "Hydro-environmental modelling and assessment of tidal impoundments along the North Wales coast". Maren Final Conference. Cardiff, 2015.

MISCELLANEOUS PUBLICATIONS

- 1. **A. Angeloudis**. "Numerical and experimental modelling of flow and kinetic processes in serpentine disinfection tanks". PhD Thesis, Cardiff University, 2014.
- 2. **A. Angeloudis**. "Design of a flow control structure for a hydraulic teaching flume". MEng dissertation, Cardiff University, 2010.

Media Coverage

- 1. S. Knapton and J. Ambrose (2017, January 13). "Swansea Bay could be first in wave of new tidal lagoons". *The Daily Telegraph*.
- 2. A. Vaughan (2017, January 12). "Swansea Bay tidal lagoon backed by government review". *The Guardian*. Associated article in *Link*.
- 3. I. Johnston (2017, January 12). "Swansea Bay project: Tidal lagoons cheaper than almost any other source of power, concludes energy expert". *The Independent*. Associated article in *Link*.
- 4. A. Wade (2017, January 12). "Tidal lagoons get green light". *The Engineer*. Associated article in *Link*.
- 5. B. Webster (2017, January 12). "Tide turns in favour of lagoon power station". The

Times. Associated article in *Link*.

Invited Talks

- 1. Tianjin Institute for Water Transport Engineering, Tianjin, China (02/08/2019)
- 2. CORESEE workshop, Dalian University of Technology, Dalian, China (28/07/2019)
- 3. ISE, Kazakh-British Technical University, Almaty, Kazakhstan (20/05/2019).
- 4. Institute for Energy Systems, University of Edinburgh, Edinburgh (10/05/2019).
- 5. Energy Futures Lab, Imperial College, London (15/11/2018).
- 6. British Dam Society, Institution of Civil Engineers, London (20/11/2017).
- 7. Department of Engineering Science, University of Oxford, Oxford (09/05/2017).
- 8. Department of Earth Science and Engineering, Imperial College, London (07/07/2016).
- 9. Tidal Lagoon Workshop, Marine Centre Wales, Bangor (18/05/2016).
- 10. CIWEM Micro-presentation Event, Cardiff University, Cardiff (04/05/2016).
- 11. ICE Wales Energy Conference, Cardiff (27/04/2016).
- 12. Cardiff Atkins YPN Micro-presentation event, Cardiff (09/12/2015).
- 13. CIWEM-ICE Welsh Tidal Energy Options and Challenges, Cardiff (25/11/2015).
- 14. Institution of Civil Engineers, London (20/10/2015).
- 15. Irish Sea 2050 Conference, Conwy (12/06/2015).
- 16. CIWEM Micro-presentation Event, Cardiff University, Cardiff (03/12/2014).
- 17. Postgraduate Research Conference, Cardiff University, Cardiff (17/01/2014).