

Research Review 18/19



Research Outputs

Research Review: Research Outputs 2018/19

Introduction

Glyndŵr University's research is intended to contribute to economic, social and cultural development. Whether local or international, small scale or large, the emphasis is always on problem-solving and making a contribution to real needs.

This report gives an indication of the wide range of research and related activity undertaken by University staff.

This report also provides details of research student completions, and formal research grants and contracts active in 2018/19.

For more information about the research undertaken at Glyndŵr University please visit:

<https://www.glyndwr.ac.uk/en/Research/Ourresearch/>

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Stewart Milne
Head of Research Services

Journal Articles

- Akinsolu, M. O., Liu, B., Grout, V., Lazaridis, P. I., Mognaschi, M. E. and Di Barba, P. (2019), 'A Parallel Surrogate Model Assisted Evolutionary Algorithm for Electromagnetic Design Optimization', *IEEE Transactions on Emerging Topics in Computational Intelligence*, Vol.3, No.2, pp.93-105, 2019. doi: 10.1109/TETCI.2018.2864747
- Anuchin, A., Zharkov, A., Shpak, D., Aliamkin, D., and Vagapov, Y. (2019), 'Current derivative measurement using closed-loop Hall-effect current sensor', *The Journal of Engineering*, Vol.2019, No.17, pp.4027-4030, doi: 10.1049/joe.2018.8101
- Grout, V. (2018), 'No More Privacy Any More?', *Information*, Vol.10, No.1. Available online 09 January 2019. doi:10.3390/info10010019
- Hansen, M., Fyall, A., Spyriadis, T., Rogers, D. and Brander-Brown, J. (2019), 'Motivating stakeholder collaboration within the aerial adventure industry', *International Journal of Tourism Research*, Vol.21, No.3, pp.311-322. doi: 10.1002/jtr.2262
- Harding, C., Liggett, S. and Lochrie, M (2019), 'Digital Engagement in a Contemporary Art Gallery: Transforming Audiences', *Arts 2019*, Vol.8, No.3, 90. doi: 10.3390/arts8030090
- Hu, B., Han, L., Kong, H., Nishinari, K., Phillips, G.O., Yang, J. and Fang, Y. (2018) 'Preparation and emulsifying properties of trace elements fortified gum arabic', *Food Hydrocolloids*, Vol.88, pp.43-49. doi: 10.1016/j.foodhyd.2018.09.027
- Gao, Z., Huang, Y., Hu, B., Zhang, K., Xu, X., Fang, Y., Nishinari, K., Phillips, G.O. and Yang, J. (2019), 'Interfacial and Emulsifying Properties of the Electrostatic Complex of β -Lactoglobulin Fibril and Gum Arabic (Acacia Seyal)', *Colloids and Surfaces A: Physicochemical and Engineering Aspects.*, Vol.562, 5 February 2019, pp.107. doi: <https://doi.org/10.1016/j.colsurfa.2018.11.007>
- Hinfelaar, M. and Hildreth, P. (2019), 'The role of universities in peripheral regions: the case of the North Wales and Mersey Dee area', *Policy Reviews in Higher Education*, Vol.3, No.2, pp.189-207. doi: 10.1080/23322969.2019.1640634
- Komenda, T., Komenda, N., and Vagapov, Y. (2019), 'Criteria of morphometric analysis of a daily load profile', *International Transactions on Electrical Energy Systems*, Vol.29, No.5, article e2847, doi: 10.1002/2050-7038.2847
- Liggett, S. and Corcoran, M. (2018), 'Interdisciplinary Research Unmasked: a new curatorial model for multi-audience engagement', *Studies in Visual Arts and Communication: An International Journal*, Vol.5, No.1. Available at: <http://journalonarts.org/previous-issues/vol-5-1-june-2018/>
- Liu, B., Akinsolu, M.O., Ali, N. and Abd-Alhameed, R. (2019), 'Efficient Global Optimisation of Microwave Antennas Based on a Parallel Surrogate Model-assisted Evolutionary Algorithm', *IET Microwaves, Antennas & Propagation*, Vol.13, No.2, pp.93-105. doi: 10.1049/iet-map.2018.5009
- Livingston, W., Madoc-Jones, I.M. and Perkins, A (2019), 'The potential of Contribution Analysis to alcohol and drug policy strategy evaluation: an applied example from Wales', *Drugs: Education, Prevention & Policy*. Available online 30 Jul 2019. doi: 10.1080/09687637.2019.1645093
- Mistry, K.K., Lazaridis, P. I., Zaharis, Z. D., Akinsolu, M. O., Liu, B., Xenos, T. D., Glover, I. A. and Prasad, R. (2019), 'Time and Frequency Domain Simulation, Measurement and Optimization of Log-Periodic Antennas', *Wireless Personal Communications*, Vol.7, No.2, pp.1-13. doi: 10.1007/s11277-019-06299-w
- Saranya, K.S., Padil, V.V.T., Senan, C., Pilankatta, R., Saranya, K., George, B., Waclawek, S and Cernik, M (2018), 'Green Synthesis of High Temperature Stable Anatase Titanium Dioxide Nanoparticles Using Gum Kondagogu: Characterization and Solar Driven Photocatalytic Degradation of Organic Dye', *Nanomaterials*, Vol.8, No.12, available online 04 December 2018. doi: 10.3390/nano8121002

Singh, N.N., Lancioni, G.E., Medvedev, O.N., Sreenivas, S., Myers, R.E. and Hwang, Y. (2018), 'Meditation on the Soles of the Feet Practice Provides Some Control of Aggression for Individuals with Alzheimer's Disease', *Mindfulness*, Vol.10, No.7, pp.1232-1242. doi: 10.1007/s12671-018-1075-0

Taylor, C. (2019), 'From learning without limits to leading without limits: An autobiographical reflective case study of leading academic development within higher education', *Innovations in Education and Teaching International*, Vol.56, No.6, available online 18 March 2019. doi: 10.1080/14703297.2019.1593212

Conference Presentations and Papers in Conference Proceedings

Liggett, S. and Jones, M. (2018), 'The potential of painting: unlocking Disenfranchised Grief for people living with dementia'. In: *Proc 1st European Association for Health Information and Libraries (EAHIL) Conference*, 9-13 July 2018, Cardiff, UK, pp 38. Available at: <https://eahilcardiff2018.wordpress.com/>

Anuchin, A., Aliamkin, D., Shpak, D., Zharkov, A., Surnin, D. and Vagapov, Y. (2018), 'Direct measurement of current derivative using a delta-sigma modulator for Sensorless Traction Motor Control'. In: *Proc. 5th IEEE International Conference on Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicles and International Transportation Electrification Conference (ESARS-ITEC)*, Nottingham, UK, 7-9 November 2018, pp. 1-4

Anuchin, A., Shpak, D., Gulyaeva, M., Aliamkin, D., Zharkov, A., and Vagapov, Y. (2018), 'A PWM Strategy for the Minimisation of Losses in a 3-level T-type Voltage Source Inverter'. In: *Proc. IEEE Int. Symp. on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM)*, Amalfi, Italy, 20-22 June 2018, pp. 703-708. doi: 10.1109/SPEEDAM.2018.8445367

Bolam, R., Vagapov, Y. and Anuchin, A. (2018), 'Review of electrically powered propulsion for aircraft'. In: *Proc. 53rd IEEE Int. Universities Power Engineering Conference UPEC-2018*, Glasgow, UK, 4-7 September 2018, pp. 1-6. doi: 10.1109/UPEC.2018.8541945

Cunningham, S., Weinel, J and Picking, R (2018), 'High-Level Analysis of Audio Features for Identifying Emotional Valence in Human Singing'. In: *Proc Audio Mostly 2018 (AM'18)*, 12-14 Sept 2018, Wrexham Glyndŵr University, UK, article no. 37. doi: 10.1145/3243274.3243313

Davies, L., Bolam, R., Vagapov, Y. and Anuchin, A. (2018), 'Review of unmanned aircraft system technologies to enable beyond visual line of sight (BVLOS) operations'. In: *Proc. 10th International Conference on Electrical Power Drive Systems (ICEPDS 2018)*, Novocherkassk, Russia, 3-6 October 2018, pp.1-6. doi: 10.1109/ICEPDS.2018.8571665

Harding, C., Liggett, S., Gradinar, A and Lochrie, M (2019), 'What Do Audiences Want from a Public Art Gallery in the Digital Age?' In: *Proceedings for EVA (Electronic Visualisation and the Arts) London*, 8th – 11th July 2019, pp.137-143. Available at: <https://www.scienceopen.com/document?vid=fe136c0d-5af2-4e06-8e1c-610deb91b4e2>

Klarmann, S., Vagapov, Y. and Gotzig, H. (2018), 'Modelling and thermal analysis of advanced insulating layer electronic applications'. In: *Proc. 24th Int. Workshop on Thermal Investigations of ICs and Systems THERMINIC-2018*, Stockholm, Sweden, 26-28 September 2018, pp. 1-4

Kochneva, M. and Romanova, E. (2019), 'Assessment of engineering mathematics in the context of distance learning'. In: *Proc. IEEE Conference of Russian Young Researchers in Electrical and Electronic Engineering (EIConRus)*, Moscow, Russia, 28-31 January 2019, pp. 1902-1907. doi: 10.1109/EIConRus.2019.8656767

Kulmanov, V., Anuchin, A., Ostrirov, V., Rusakov, A. and Vagapov, Y. (2018), 'Simulation and testing of a power converter for aircraft AC electric power generation system using software elimination of

higher harmonics'. In: *Proc. 53rd IEEE Int. Universities Power Engineering Conference UPEC-2018*, Glasgow, UK, 4-7 September 2018, pp. 1-6. doi: 10.1109/UPEC.2018.8541922

McClanahan, C., Bolam, R., Vagapov, Y. and Anuchin, A. (2019), 'Analysis of the effects on the pitching, rolling and yawing rate of a v-tail configured quadcopter'. In: *Proc. 25th Int. Workshop on Electric Drives: Optimization in Control of Electric Drives*, Moscow, Russia, 30 January – 2 February 2019, pp. 1-7

Nicholls, S., Cunningham, S. and Picking, R (2018), 'Collaborative Artificial Intelligence in Music Production'. In: *Proc Audio Mostly 2018 (AM'18)*, 12-14 Sept 2018, article no. 33. doi: 10.1145/3243274.3243311 8

Owens, S. and Cunningham, S (2018), 'Auditory masking and the Precedence Effect in Studies of Musical Timekeeping'. In: *Proc Audio Mostly 2018: Sound in Immersion and Emotion (AM'18)*. ACM, New York, NY, USA, 4 pages. <https://doi.org/10.1145/3243274.3243312>

Veligorskyi, O., Chakirov, R., Khomenko, M. and Vagapov, Y. (2019), 'Artificial neural network motor control for full-electric injection moulding machine'. In: *Proc. IEEE International Conference on Industrial Technology*, Melbourne, Australia, 13-15 Feb. 2019, pp. 60-65. doi: 10.1109/ICIT.2019.8755023

Other Research Outputs

Robbins, M., and Ross, C. (2019), 'Keirseley Temperament Sorter'. In: V. Zeigler-Hill & T.K Shackelford (Eds.). *Encyclopaedia of Personality and Individual Differences*. Springer. ISBN 978-3-319-24610-9. Available at: <https://www.springer.com/gb/book/9783319246109>

Research Degree Awards 2018/19

PhD

Besler, F.	Development and analysis of friction crush welding
Edward, A.s	Intertextuality and gender in the work of Alan Moore
Graf-McKee, A.	Older adults and domestic abuse in Wales: A qualitative study of frontline victim services
Jones, M.	Tacit Knowledge and Materiality within Painting as an immersive experience: a study of a creative dialogue between an artist and People living with Dementia in North Wales
Kornilin, D.	Inline CMOS matrix image sensor for investigation of sizes, concentration and shapes of particles in hydraulic liquids
Oram, D.	Ethical Considerations in Future Digital Technologies
Thomas, M.	Object-based learning in and beyond institutions: a study of audience engagement through the creation of artworks

Professional Doctorate

O'Driscoll, R.	The Change Laboratory: Scaffolding the gap between addiction science and community-based practice
Ross, T.	A Grounded Theory study exploring healthcare consumers' and nurses' perceptions of caring

MPhil

Evans, C.	An individual differences approach to the ideal relationship
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Research Grants and Contracts active in 2018/19

Sponsor	Total Value (£)	Project	Principal Investigator
ADDACTION (Big Lottery)	£219,298	Drink Wise, Age Well	Dr Iolo Madoc Jones
Barnardo's	£56,661	The ASPIRE project	Prof Mandy Robbins
BCUHB	£20,000	Training and Development in Arts in Health	Dr Sue Liggett
Cadwyn Clwyd	£24,700	Managerial Skills for Small Business Start-Ups	Dr Ben Binsardi
Empower Be the Change	£16,662	Evaluation	Dr Nikki Lloyd Jones
EPSRC	£74,640	High Value Manufacturing Catapult Fellowship: Addressing the industrialisation challenges in rapid microwave and radio frequency processing of polymer matrix composites	Prof Richard Day
EPSRC Manufacturing Hub	£32,316	Microwave in line heating to address the challenges of high rate deposition	Prof Richard Day
ESRC	£11,979	Exploring the Recent Trend Shift in Social and Management Research: Social Media Data and its Sampling Property	Dr Ben Binsardi
European Regional Development Fund	£3,782,565	Centre for Photonics Expertise	Caroline Gray
Figure 8 Consultancy	£33,000	Evaluation of Minimum Pricing of alcohol in Scotland	Dr Iolo Madoc Jones/Dr Wulf Livingston
Forces in Mind Trust	£21,681	Leaving the Armed Forces and living in Wales- Dissemination	Dr Nikki Lloyd Jones
Mostyn Gallery LTD	£15,000	Investigation and identification of Mostyn's existing digital content and the design of a methodology for construction of new platforms	Prof Alec Shepley
rcbcWales	£10,774	RCBCWales First into Research Fellowship	Dr Joanne Pike
Welsh Government (via Figure 8 Consultancy)	£50,273	Minimum Price for Alcohol (Wales) Lot 1	Dr Wulf Livingston
Welsh Government (via Figure 8 Consultancy)	£17,200	Minimum Price for Alcohol (Wales) Lot 3	Dr Wulf Livingston
Welsh Government (via Figure 8 Consultancy)	£5,000	Minimum Price for Alcohol (Wales) Lot 4	Dr Wulf Livingston