

Dr. Abdulrazak J. OTARU

Assistant Professor



Personal Data:

Nationality | Nigerian
Date of Hire | 20th August 2023
Date Rank Obtained | 20th August 2023
Department | Chemical Engineering
Email |
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Education:

Academic Degree	Major	specialty	Place of Issue	Address	Date
Doctorate (PhD)	Chemical Engineering	Transport Processes and Acoustics	The University of Nottingham, Nottingham, United Kingdom	University Park Campus, NG7 2RD	12 th December 2018
Masters (M.Sc.)	Chemical Engineering	Chemical Engineering	Federal University of Technology, Minna, Nigeria	Gidan-Kwano Campus, Minna, Nigeria	30 th January 2013
Bachelor (B.Sc.)	Chemical Engineering	Chemical Engineering	Abubakar Tafawa Balewa University, Bauchi, Nigeria	Yelwa Campus, Bauchi, Nigeria	7 th May 2009

PhD, Master or Fellowship Research Title: (Academic Honors or Distinctions):

PhD	- The 2014 University of Nottingham Dean of Engineering Research Scholarship for International Excellence. - The 2014 Petroleum Technology Development Fund (PTDF) Nigeria.
Master	The 2012 Zeno Karl Schindler Foundation Master Thesis Grant/Award, Viganello, Switzerland
Bachelor	- Certificate of Dean's List, 2008 - Best Student in Transport Phenomena I and Chemical Engineering Thermodynamics I, 2006.
Post-Ph.D.	- Best Research Article (MAMI-D-19-00676R1) Award by Metal and Materials International (Q1-cited Journal), Issue 4, 2021. Sixth (6) Position – Committee of Deans of Engineering and Technology of Nigerian Universities (CODET) Publication Competition, 2023. Title of Article: Three-Dimensional High-Resolution Image Inversion and Pore Level CFD Characterization of the Effective Thermal Conductivity of Replicated Microcellular Structures. Authors: A.J. Oturu, M. Abdulkadir, A.S. Kovo, M.R. Corfield, N. Tanko, O.A. Odey, A. Kenfack & U.O. Aroke.

Experiences:

Title of Job	Address of Work	Country	Date	
Academic	Federal University of Technology Minna, Nigeria, P.M.B. 065, Gidan-Kwano Campus, Minna, Nigeria.	Nigeria	From	19th Jan., 2012
			To	19 th Aug., 2023
Computational Fluid Dynamics (CFD) Demonstrator/Instructor.	The University of Nottingham, University Park Campus, Nottingham, NG7 2RD, United Kingdom,	United Kingdom	From	9 th Nov., 2014
			To	16 th Aug., 2016
Academic	King Faisal University, P.O. 380, Al Ahsa, Saudi Arabia	Saudi Arabia	From	20 th Aug. 2023
			To	Till date

Research Interests:

1. Experimental and Computational Fluid Dynamics
2. Porous Media Transport and Acoustics
3. Machine Learning and AI Applications
4. Carbon Capture Technologies

Publications:

#	Name of author(s)	Title of Publication	Publisher and Date of Publication	Link of Publication
1	A.J. Otaru & A.R. Kennedy	The Permeability of Virtual Macroporous Structures Generated by Sphere-Packing Models: Comparison with analytical models	Scripta Materialia, Elsevier (2016) Q1 – Journal (Clarivate & Scopus)	https://doi.org/10.1016/j.scriptamat.2016.06.037 https://doi.org/10.1016/j.scriptamat.2018.02.051
2	A.J. Otaru, H.P. Morvan & A.R. Kennedy	Measurement and Simulation of Pressure Drop across Porous Aluminium in the Darcy-Forchheimer Regime.	Acta Materialia, Elsevier (2018) Q1 – Journal (Clarivate & Scopus)	https://doi.org/10.1016/j.actamat.2018.02.051
3	Otaru, A.J., Morvan, H.P. & Kennedy, A.R.	Modelling and Optimisation of Sound Absorption in Replicated Microcellular Metals	Scripta Materialia, Elsevier (2018) Q1 – Journal (Clarivate & Scopus)	https://doi.org/10.1016/j.scriptamat.2018.03.022
4	A.J. Otaru, H.P. Morvan & A.R. Kennedy	Airflow Measurement across Negatively-Infiltration Processed Porous Aluminium Structures	American Institute of Chemical Engineers AIChE J, Wiley-Blackwell (2019) Q1 – Journal (Clarivate & Scopus)	https://doi.org/10.1002/aic.16523
5	A.J. Otaru, H.P. Morvan & A.R. Kennedy	Numerical Modelling of the Sound Absorption Spectra for Bottleneck Dominated Porous Metallic Structures.	Applied Acoustics, Elsevier (2019) Q1 Journal (Clarivate & Scopus)	https://doi.org/10.1016/j.apacoust.2019.03.014

6	A.J. Otaru & A.R. Kennedy	Investigation of the Pressure Drop across Packed Beds of Spherical Beads: Comparison of empirical models with pore-level computational fluid dynamics simulations	ASME Fluids Engineering, ASME (2019) Q1 – Journal (Clarivate & Scopus)	https://doi.org/10.1115/1.4042957
7	A.J. Otaru	Enhancing the Sound Absorption Performance of Porous Metals using Tomography Images.	Applied Acoustics, Elsevier Q1 – Journal (Clarivate & Scopus)	https://doi.org/10.1016/j.apacoust.2018.09.007
8	A.J. Otaru	Review on Processing and Fluid Transport in Porous Metals with a Focus on Bottleneck Structures	Metal and Materials International, Springer (2020) Q1 – Journal (Clarivate & Scopus)	https://doi.org/10.1007/s12540-019-00345-9
9	A.J. Otaru	Review on the Acoustical Properties and Characterization Methods of Sound Absorbing Porous Structures: A focus on microcellular structures made by a replication casting method	Metal and Materials International, Springer (2020) Q1 – Journal (Clarivate & Scopus)	https://doi.org/10.1007/s12540-019-00512-y
10	Abdulrazak J. Otaru	The Permeability of Replicated Microcellular Structures in the Darcy Regime, American Institute of Chemical Engineers	American Institute of Chemical Engineers AIChE J, Wiley-Blackwell (2020) Q1 – Journal (Clarivate & Scopus)	https://doi.org/10.1002/aic.16915
11	Abdulrazak J. Otaru, Mukhtar Abdulkadir, Martin R. Corfield, Anatole Kenfack, & Nuradeen Tanko	Computational Evaluation of Effective Transport Properties of Differential Microcellular Structures	American Institute of Chemical Engineers AIChE J, Wiley-Blackwell (2020) Q1 – Journal (Clarivate & Scopus)	https://doi.org/10.1002/aic.16928
12	A.J. Otaru, M.S. Muhammad, M.B. Samuel, A.G. Olugbenga, M.E. Gana & M.R. Corfield	Pressure Drop in High-Density Porous Metals via Tomography Datasets	Metal and Materials International, Springer (2020) Q1 – Journal (Clarivate & Scopus)	https://link.springer.com/article/10.1007/s12540-019-00431-y
13	A.J. Otaru & M.B. Samuel	Pore-level CFD Investigation of Velocity and Pressure Dispositions in Microcellular Structures	Materials Research Express, IOP Publishing Q2 – Journals (2021) (Clarivate & Scopus)	https://doi.org/10.1088/2053-1591/abf3e2
14	Otaru, A.J., Manko, Z, Odumu, O.E., Isah, A.G., & Corfield, M.R.	Numerical Modelling and Optimisation of Reverberation Cutback for Packed Spheres	Journal of King Saud University –	https://doi.org/10.1016/j.jksues.2021.08.005

			Engineering Sciences, Elsevier (2021) Q1 – Journal (Clarivate & Scopus)	
15	A.J. Otaru , O.E. Odumu, Z. Manko, A.G. Isah, R.O. Isa & M.R. Corfield	The Impact of Microcellular Structures on the Sound Absorption Spectra for Automotive Exhaust Performance Mufflers	Applied Acoustics, Elsevier, (2022) Q1 – Journal	https://doi.org/10.1016/j.apacoust.2021.108508
16	A.J. Otaru , M. Abdulkadir, A.S. Kovo, M.R. Corfield, N. Tanko, O.A. Odey, A. Kenfack & U.O. Aroke	Three-Dimensional High-Resolution Image Inversion and Pore level CFD Characterization of Effective Thermal Conductivity of Replicated Microcellular Structures	International Journal of Thermofluids, Elsevier, (2022) Q1 – Journal (Clarivate & Scopus)	https://doi.org/10.1016/j.ijft.2022.100141
17	A.J. Otaru , R.O. Isa, A.U. Emene, A.A. Faruq, P.O. Sedemogun & S.M. Hassan	The Effective Thermal Conductivity of Virtual Macroporous Structures	Results in Engineering, Elsevier, (2022) Q2 – Journal (Clarivate & Scopus)	https://doi.org/10.1016/j.rinen.2022.100531
18	Moses, H., Odigure, J.O., Otaru, A.J. & Odouza, C.F	A Potential Remediation of Total Petroleum Hydrocarbon from Contaminated Soils using Surfactant Suspended Multiwall Carbon Nanotubes.	Results in Engineering, Elsevier, (2023) Q2 – Journal (Clarivate & Scopus)	https://doi.org/10.1016/j.rinen.2023.101371
19	Otaru, A.J. , Adeniyi, O.D., Bori, I, Olugboji, O.A. & Odigure, J.O.	Numerical Simulation and Analysis of the Acoustic Properties of Bimodal and Modulated Macroporous Structures.	Applied Sciences, MDPI (2023) Q2 – Journal (Clarivate & Scopus)	Accepted for Publication
20	Otaru, A.J. , Alhulaybi, Z.A. & Owoseni, T.A.	On the Hydrodynamics of Macroporous Structures: Experimental, CFD and Artificial Neural Network Analysis,	Chemical Engineering Journal Advances, Elsevier (2023) Q1 – Journal (Clarivate & Scopus)	https://doi.org/10.1016/j.cej.2023.100545

Language Proficiency:

1. English (Fluent)
2. Ebira (Fluent)
3. Arabic (Learning)