Personal Details

Name:	Kawa Mustafa Aziz Manmi
Date of Birth:	January first, 1980
Gender:	Male
Specialty:	Applied Mathematics
Current Address:	288D New Zanko Village, Erbil, Kurdistan Region, Iraq
Business Address:	-

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Employment History

20th October 2019 – current, Assistant Professor at; the Mathematics Department, College of Science, Salahaddin University-Erbil, IRAQ
   Main Duties:
   - Teaching advanced calculus, probability and numerical methods modules.
   - Member of scientific committee for undergraduate and postgraduate studies.
   - Supervising postgraduate students.

15th Feb 2018- 20th October 2019, Research Fellow, School of Mathematics, University of Birmingham, UK, (Research project: Maximizing cavitation to clean dental implants, EPSRC Grant)
   Main Duties:
   - Establishing two numerical methods for study cavitation.
   - Writing scientific research papers.
   - Attending scientific events including workshop, conferences, regular seminars, weekly research group meeting and training courses.

2015-2018 (PhD) Lecturer at
   1. Mathematics Department, College of Science, Salahaddin University-Erbil, Iraq.
   2. IT department in Lebanese French University, Erbil- Iraq (part times-evening).
   Main Duties:
   - Teaching mathematics and computer programming modules (undergraduate and postgraduate).
   - Administration duties including being head of the department and member of exam board.
   - Working, writing, and publishing scientific research papers.

2007-2011 (MSc) Lecturer at the Mathematics Department, College of Science, Salahaddin University-Erbil, Iraq.
   Main Duties:
   - Teaching mathematics and computer programming modules (undergraduate).
   - Administration duties including being coordinator of the department, in charge or lecture timetable and member of exam board.
   - Working, writing, and publishing scientific research papers.

2003-2005 Assistant researcher in the Mathematics Department, College of Science, Salahaddin University-Erbil, Iraq.
   Main Duties:
   - Tutoring and marking exam papers of mathematical modules and instructor's assistant at computer programming Labs.

Degrees/Qualifications

PhD in Applied Mathematics, School of Mathematics, University of Birmingham,UK, March 2015.
Title of the Thesis: Three Dimensional Acoustic Microbubble Dynamics near Rigid Boundary

MSc in numerical analysis, Salahaddin University/Erbil-Iraq, August 2007.

BSc in Mathematics, Salahaddin University/Erbil-Iraq, July 2003

Teaching Experience

- Introduction to Numerical Methods (Postgraduate), Soran and Salahaddin Universities, Erbil, 2019-2020.
- Introduction to Discrete Mathematics (Undergraduate), IT Department, Tishk International University, 2019-2020.
- Introduction Probability and Statistics, (Undergraduate), IT Department, Tishk International University, 2019-2020.
- Advanced Calculus (Undergraduate), Mathematics Department, Salahaddin University-Erbil-Iraq, 2015,2016,2017, 2019.
- Numerical Analysis (Undergraduate), Mathematics Department, Salahaddin University-Erbil-Iraq, 2010, 2019.
- Visual Basic programming (Undergraduate), Mathematics Department, Salahaddin University-Erbil-Iraq, 2008-2010.
- Linear Programming (Undergraduate), Mathematics Department, Salahaddin University-Soran-Iraq., 2008
- Computational Mathematics using Matlab (Undergraduate), Mathematics Department, Salahaddin University-Erbil-Iraq, IT Department in Lebanese French University-Erbil, 2015-2018,
- Introduction Continuum Mechanics, Soran and Salahaddin Universities, Erbil, 2019-2020.

Research Interests

Bubble dynamics; Modeling Cavitation, Boundary integral method, Numerical Modeling and Computational Fluid Dynamics.

Publications

1. **Manmi, K.**, Aziz, I.A., Arjunan, A., Saeed, R.K. and Dadvand, A., 2021. Three-dimensional oscillation of an acoustic microbubble between two rigid curved plates. Journal of Hydrodynamics, 33(5), pp.1019-1034.

2. **K. M. A. Manmi**, W. B. Wu, N. Vyas, W. R. Smith, Q. X. Wang, A. D. Walmsley, (2020) Numerical investigation of cavitation generated by an ultrasonic dental scaler tip vibrating in a compressible liquid. *Ultrasonics Sonochemistry* **63**, 104963.

3. N.Vyas, Q.X.Wang, **K.A.Manmi**, R.L.Sammons, S.A.Kuehnea, A.D.Walmsley. How does ultrasonic cavitation remove dental bacterial biofilm? *Ultrasonics – Sonochemistry*, Volume 67, October 2020, 105112

4. Imad A. Aziz , **Kawa M. A. Manmi** , Rostam K. Saeed, Abdolrahman Dadvand, (2019) Modeling Three Dimensional Gas Bubble Dynamics between Two Curved Rigid Plates using Boundary Integral Method. *Engineering Analysis with Boundary Elements,* **109**, 19-31.

5. Vyas, N., **Manmi, K.**, Wang, Q., Jadhav, A.J., Barigou, M., Sammons, R.L., Kuehne, S.A. and Walmsley, A.D. (2019), Which Parameters Affect Biofilm Removal with Acoustic Cavitation? A Review. *Ultrasound in medicine & biology* **45** (5), 1044-1055.

6. **Kawa Manmi**, Qianxi Wang, (2017) Acoustic microbubble dynamics with viscous effects. *Ultrasonics Sonochemistry*, **36**, 427-436.

7. Q X Wang, **K Manmi** & Michael L. Calvisi (2015), Numerical modeling of the 3D dynamics of ultrasound contrast agent microbubbles using the boundary integral method. *Phys. Fluids* 27, 022104)

8. Q X Wang & **K Manmi** (2014), Microbubble dynamics near a wall subjected to a travelling acoustic wave. *Phys. Fluids* 26, 032104. (Impact factor 2.031)

9. Q X Wang, **K Manmi** &, K K Liu (2015), Cell mechanics in biomedical cavitation. *Interface Focus*, 5(5), 20150018. (Impact factor 2.63)

10. Rostam K. Saeed and **Kawa M Aziz**, (2008), "An iterative method with quartic convergence for solving nonlinear equations", Applied Mathematics and Computation, **202**, 435-440. (Impact factor 0.961)

11. **Kawa M Aziz**, (2008), An Iterative Method with Quartic convergence for nonlinear Equations Based on Modified Homotopy Perturbation Method, Journal of Applied Sciences Research, 4(11): 1483-1487.

12. Abbas Y. Al-Bayati, Rostam K. Saeed and **Kawa M. Aziz**, (2012) "Romberg algorithm to solve a System of Nonlinear Fredholm Integral Equations of Second Kind", Al-Rafiden Journal of Computer Sciences and Mathematics, Vol. 9, No. 2.

13. Rostam K. Saeed and **Kawa M. Aziz**, (2007), "Approximate Solution of the System of Nonlinear Fredholm Integral Equations of the Second Kind Using Spline Function", Journal of University of Kirkuk Scientific Studies, Vol.3, N0. 1, p. 113-128.

Attending Scientific Meeting

1. PERCAT Postdoctoral Researcher Conference (EPS & LES) University of Birmingham, UK, 26th June 2019 (Presenting Poster).
2. Presentation entitled *Numerical Investigation of Acoustic Cavitation as a Novel Method of Dental Plaque Removal* in the Workshop on Cavitation Exploitation at Ljubljana, Slovenia 27-28 Sep. 2018.
3. PERCAT Postdoctoral Researcher Conference (EPS & LES) University of Birmingham, 20th June 2018.
4. Presentation entitled New Weights in Laplacian Smoothing on Triangular Mesh at 1st International Conference on Information Technology (ICoIT17), 2017
5. Presentation entitled (3D Microbubble Dynamics near a Wall Subject to High Intensity Ultrasound Using BIM) at First Swedish-Kurdish Workshop in Educational Aspects of Applied and Industrial Mathematics (Oct, 2015) University of Zakho/ Duhok, Kurdistan Region-Iraq.
6. Participated at, The Murfy International Scientific Meeting, Amazing (cavitation) bubbles: great potentials and challenges (Nov, 2014), Kavli Royal Society Centre, Buckinghamshire, UK
7. Participated at, A meeting to celebrate the career of Professor John Blake,(Sep, 2013) Mathematical challenges in bubbles and biological fluid mechanics School of Mathematics, University of Birmingham, UK.
8. Participated at,4th annual BEAR PGR Conference on Research Computing (2013) University of Birmingham, UK.
9. Manmi, K.M.A. and Saeed, R.K. (Nov, 2009) Some Third and fourth-order methods to solve Non-linear Equations Using Interpolation polynomials. Paper presented at the first Iraq-French mathematics conference in cooperation with College of Science/Salahaddin University-Erbil/Iraq.

Training Courses

1. Academic Consultancy – One Day Workshop, University of Birmingham Enterprise Limited, 29th May 2019.
2. The NVIDIA Deep Learning Institute (DLI) and Advanced Research Computing, University of Birmingham, Wed, January 16, 2019.
3. Software Carpentry – Python, the workshop focused on Python and the curriculum will include: The Unix Shell, Version Control with Git, and Programming with Python, University of Birmingham, UK, 27th and 28th December 2018
4. EndNote Workshop - two and a half hours 16 November 2018. Library Services of University of Birmingham regularly run courses on Endnote.
5. Online OpenMP Course, four sessions on consecutive Wednesday starting on 24th October with the last session on 14th November, 2018, by Mark Bull in EPCC's (http://www.archer.ac.uk/training/courses/2018/10/openmp_online/index.php)
6. 2nd Repository Workshop and Introdction to Programming in OpenFOAM, 24th -25th May 2018, CCP-WSI workshop, Rutherford Appleton Laboratory, Didcot, United Kingdom.
7. Continual Professional Development: Meshing Methods for Computational Fluid Dynamics, 24-26 July, 2018, University of Central Lancashire, Preston, United Kingdom.

Academic Administration & Service

2016- 2018   Head of the Mathematics Department, College of Science, Salahaddin University-Erbil, IRAQ.

2015-2016 Member of the Curriculum Development Committee at the Mathematics Departments College of Science /Salahaddin University/Erbil/IRAQ

2008-2010, 2015, 2016 Member (or/and Head) of the final examination committee for undergraduate students.

2008-2010, Coordinate of the Mathematics Department, College of Science, Salahaddin University-Erbil, IRAQ.

PhD/MSc Thesis Defense Committee

Mohammed I. Sadeeq, MSc Thesis, 2016, Numerical Treatments of Whitham-Broer-Kaup Shallow Water Model, Mathematics Department, College of Science, Salahaddin University-Erbil, IRAQ

Supervising Postgraduate Students

Imad Aziz, PhD student (2015-2020), Mathematics Department, College of Science, Salahaddin University-Erbil, IRAQ. (Modelling Bubble dynamics near broken rigid boundary using Finite volume method (Openfoam Package))

Dana Ahmed, MSc student (2020- current), Mathematics Department, College of Science, Salahaddin University-Erbil, IRAQ.

Hawchin Qadar MSc student (2020- current), Mathematics Department, College of Science, Soran University, Kurdistan Region, IRAQ.

Saman Bapir, PhD student (2021-current), Mathematics Department, College of Science, Salahaddin University-Erbil, IRAQ. (Modelling bubble dynamics near broken rigid boundary using finite volume method (openfoam package))

Asaad Abozeid Jund, PhD student (2021-current), Department of Mathematics, Faculty of Science, Soran University, Kurdistan Region, IRAQ. (Modelling three-dimensional bubble dynamics inside circular cylinder and near elastic particle in non-Newtonian fluid using boundary integral method)

Jegyr A. Agha, PhD student (2021-current), Department of Mathematics, Faculty of Science, Soran University, Kurdistan Region, IRAQ. (Modelling Bubble dynamics near complex geometry using Finite volume method (Openfoam Package)

Technical Skills

Computer Languages	Matlab, Python, Fortran, Visual Basic, Pascal, and C++.
Software	Microsoft Office (Professional in word, PowerPoint, and Excel), Maple, Abaqus, OpenFoam, Ansys, Paraview, Endnote, HyperMesh, Latex Package, GitHub
Operating Systems	Windows and Linux

Reviewer

Journals:
- Hydrodynamics (Springer)
- Ultrasonics Sonochemistry (Elsevier),
- Mechanical Behavior of Biomedical Materials (Elsevier).