



Born 22 Jul 1976, Ibb, Yemen
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EDUCATION

PhD (Mathematics) May 2002 – Apr 2005.
Department of Mathematics, Faculty of Science, Universiti Teknologi Malaysia, Johor, Malaysia.

MSc (Mathematics) Dec 2000 – Apr 2002.
Department of Mathematics, Faculty of Science, Universiti Teknologi Malaysia, Johor, Malaysia.

BSc (Mathematics) Sep 1995 – Jul 1999.
Department of Mathematics, Faculty of Science, University of Baghdad, Baghdad, Iraq.

EMPLOYMENT HISTORY

Professor Sep 2015 – present.
Department of Mathematics, Statistics and Physics, College of Arts and Sciences, Qatar University, Doha, Qatar.

Associate Professor Sep 2011 – Aug 2015.
Department of Mathematics, Faculty of Science, King Khalid University, Abha, Saudi Arabia.

Assistant Professor Sep 2009 – Sep 2011.
Department of Mathematics, Faculty of Science, King Khalid University, Abha, Saudi Arabia.

Assistant Professor Jun 2005 – Sep 2009.
Department of Mathematics, Faculty of Science, Ibb University, Ibb, Yemen.

Teaching Assistant Oct 1999 – Dec 2000.
Department of Mathematics, Faculty of Science, Ibb University, Ibb, Yemen.

ACADEMIC VISITS

Visiting Professor 28 Jan 2018 – 9 Feb 2018
Department of Mathematics, Macquarie University, Sydney, Australia.

Visiting Professor 21 Jan 2018 – 25 Jan 2018.
UTM Centre for Industrial and Applied Mathematics (UTM-CIAM), Universiti Teknologi Malaysia, Johor, Malaysia.

Visiting Researcher Jun 2013 – Aug 2013.
UTM Centre for Industrial and Applied Mathematics (UTM-CIAM), Universiti Teknologi Malaysia, Johor, Malaysia.

Visiting Researcher Jul 2011 – Aug 2011.
Ibnu Sina Institute for Fundamental Science Studies, Universiti Teknologi Malaysia, Johor, Malaysia.

Visiting Researcher Aug 2009 – Sep 2009.
Ibnu Sina Institute for Fundamental Science Studies, Universiti Teknologi Malaysia, Johor, Malaysia.

RESEARCH INTERESTS

Applied and Computational Complex Analysis, particularly:

- Boundary integral equations with the generalized Neumann kernel.
- Numerical conformal mapping.
- Riemann–Hilbert boundary value problem.
- Numerical methods for 2D Potential Flow.
- Potential Theory.

COLLABORATORS

1. **Ejaily M. A. Alejaily**, Universiti Teknologi Malaysia, Johor, Malaysia.
2. **Samer A. A. Al-Hatemi**, University of Dammam, Dammam, Saudi Arabia.
3. **Fayzah A. A. Al-Shihri**, King Khalid University, Abha, Saudi Arabia.
4. **Norsarahaida S. Amin**, Universiti Teknologi Malaysia, Johor, Malaysia.
5. **Darren G. Crowdy**, Imperial College London, UK.
6. **Christopher C. Green**, Queensland University of Technology, Australia.
7. **Khalifa A. Hazaa**, Qatar University, Qatar.
8. **Munira Ismail**, Universiti Teknologi Malaysia, Johor, Malaysia.
9. **El Mostafa Kalmoun**, Qatar University, Qatar.
10. **Everett H. Kropf**, Imperial College London, UK.
11. **Jörg Liesen**, Technische Universität Berlin, Berlin, Germany.
12. **Ali H. M. Murid**, Universiti Teknologi Malaysia, Johor, Malaysia.
13. **Takashi Sakajo**, Kyoto University, Kyoto, Japan.
14. **Ali W.K. Sangawi**, Universiti of Sulaimani, Sulaimani, Iraq.
15. **Olivier Sète**, Technische Universität Berlin, Berlin, Germany.
16. **Rudolf Wegmann**, Max-Planck-Institut für Astrophysik, Garching, Germany.
17. **Matti Vuorinen**, University of Turku, Turku, Finland.
18. **Arif A. M. Yunus**, Universiti Sains Islam Malaysia, Sembilan, Malaysia.

PUBLICATIONS

1. **M.M.S. Nasser** & M. Vuorinen, Conformal Invariants in Simply Connected Domains, submitted.
2. **M.M.S. Nasser** & M. Vuorinen, Computation of conformal invariants, *Applied Mathematics and Computation*, 389 (2021) 125617. .
3. EM Kalmoun, **M.M.S. Nasser** & M. Vuorinen, Numerical computation of Mityuk's function and radius for circular-radial slit domains, *Journal of Mathematical Analysis and Applications*, 490 (2020) 124328. .
4. EM Kalmoun, **M.M.S. Nasser** & KA Hazaa, The Motion of a Point Vortex in Multiply Connected Polygonal Domains, *Symmetry* 12(7) (2020) 1175.
5. **M.M.S. Nasser** & EM Kalmoun, Application of integral equations to simulate local fields in carbon nanotube reinforced composites, In R. McPhedran, S. Gluzman, V. Mityushev, N. Rylko (eds.), 2D and Quasi-2D Composite and Nanocomposite Materials, Elsevier, pp. 233–248, 2020.
6. **M.M.S. Nasser**, PlgCirMap: A MATLAB toolbox for computing conformal mappings from polygonal multiply connected domains onto circular domains, *SoftwareX* 11 (2020) 100464.
7. **M.M.S. Nasser** & M. Vuorinen, Numerical computation of the capacity of generalized condensers, *Journal of Computational and Applied Mathematics* 377 (2020) 112865.
8. **M.M.S. Nasser**, Numerical computing of preimage domains for bounded multiply connected slit domains, *Journal of Scientific Computing* 78 (2019) 582–606.
9. AAM Yunus, A Yunus & **M.M.S. Nasser**, Numerical Conformal Mapping onto the Entire Complex Plane Bounded with Finite Straight Slit and Logarithmic Spiral Slits, *Journal of Physics: Conference Series* 1212 (2019) 012014.
10. AHM Murid, AAM Yunus & **M.M.S. Nasser**, Numerical Conformal Mapping onto the Exterior Unit Disk with a Straight Slit and Logarithmic Spiral Slits, *Journal of Physics: Conference Series* 1212 (2019) 012015.
11. **M.M.S. Nasser**, Numerical conformal mapping onto the parabolic, elliptic and hyperbolic slit domains, *Bulletin of the Malaysian Mathematical Sciences Society* 41 (2018) 2067–2087.
12. **M.M.S. Nasser**, A Boundary Integral Method for the General Conjugation Problem in Multiply Connected Circle Domains. In: Drygaś P., Rogosin S. (eds) Modern Problems in Applied Analysis. Trends in Mathematics, pp. 153–168. Birkhäuser, Cham (2018).
13. **M.M.S. Nasser** & C.C. Green, A fast numerical method for ideal fluid flow in domains with multiple stirrers, *Nonlinearity* 31 (2018) 815–837 .
14. Jörg Liesen, Olivier Sète & **M.M.S. Nasser**, Fast and accurate computation of the logarithmic capacity of compact sets, *Computational Methods and Function Theory*, 17(4) (2017) 689–713.
15. **M.M.S. Nasser**, Jörg Liesen & Olivier Sète, Numerical computation of the conformal map onto lemniscatic domains, *Computational Methods and Function Theory*, 16(4) (2016) 609–635.
16. D.G. Crowdy, E.H. Kropf, C.C. Green & **M.M.S. Nasser**, The Schottky-Klein prime function: a theoretical and computational tool for applications, *IMA Journal of Applied Mathematics*, 81(3) (2016) 589–628.
17. **M.M.S. Nasser**, Fast computation of the circular map, *Computational Methods and Function Theory*, 15(2) (2015) 187–223.
18. **M.M.S. Nasser**, Fast solution of boundary integral equations with the generalized Neumann kernel, *Electronic Transactions on Numerical Analysis*, 44 (2015) 189–229.
19. **M.M.S. Nasser**, Takashi Sakajo, Ali H.M. Murid & Lee Khiy Wei, A fast computational method for potential flows in multiply connected coastal domains, *Japan Journal of Industrial and Applied Mathematics*, 32(1) (2015) 205–236.

20. **M.M.S. Nasser**, Fast computation of hydrodynamic Green's function, *Revista Cubana de Fisica* 32(1) (2015) 26–32.
21. Arif A.M. Yunus, Ali H.M. Murid & **M.M.S. Nasser**, Numerical conformal mapping and its inverse of unbounded multiply connected regions onto logarithmic spiral slit regions and rectilinear slit regions, *Proceedings of the Royal Society A-Mathematical Physical and Engineering Sciences*, 470(2162) (2014), Article No. 20130514.
22. Arif A.M. Yunus, Ali H.M. Murid & **M.M.S. Nasser**, Numerical evaluation of conformal mapping and its inverse for unbounded multiply connected regions, *Bulletin of the Malaysian Mathematical Sciences Society*, 37(1) (2014) 1–24.
23. **M.M.S. Nasser**, Ali H.M. Murid & Ali W. K. Sangawi, Numerical conformal mapping via a boundary integral equation with the adjoint generalized Neumann kernel, *TWMS Journal of Pure and Applied Mathematics* 5(1) (2014) 96–117.
24. **M.M.S. Nasser**, Convergence of numerical solution of generalized Theodorsen's nonlinear integral equation, *Abstract and Applied Analysis*, Volume 2014 (2014), Article ID 213296, 11 pages.
25. **M.M.S. Nasser** & F.A.A. Al-Shihri, A fast boundary integral equation method for conformal mapping of multiply connected regions, *SIAM Journal on Scientific Computing*, 35(3) (2013) A1736–A1760.
26. **M.M.S. Nasser**, Numerical conformal mapping of multiply connected regions onto the fifth category of Koebe's canonical slit regions, *Journal of Mathematical Analysis and Applications*, 398 (2013) 729–743.
27. Ali W. K. Sangawi, Ali H.M. Murid & **M.M.S. Nasser**, Radial slit maps of bounded multiply connected regions, *Journal of Scientific Computing*, 55 (2013) 309–326.
28. Samer A.A. Al-Hatemi, Ali H.M. Murid & **M.M.S. Nasser**, A boundary integral equation with the generalized Neumann kernel for a mixed boundary value problem in unbounded multiply connected regions, *Boundary Value Problems*, 2013 (2013) Article No. 54.
29. A.S.A. Hamzah, A.H.M. Murid & **M.M.S. Nasser**, Boundary integral equations with the generalized Neumann kernel for Robin problem in simply connected region, *International Journal of Applied Mathematics & Statistics* 44(14) (2013) 8–20.
30. **M.M.S. Nasser** & A.H.M. Murid, A boundary integral equation with the generalized Neumann kernel for the Ahlfors map, *Clifford Anal. Clifford Algebr. Appl.* 2(4) (2013) 307–312.
31. S.A.A. Al-Hatemi, A.H.M. Murid and **M.M.S. Nasser**, Solving a mixed boundary value problem via an integral equation with adjoint generalized Neumann kernel in bounded multiply connected regions, *AIP Conf. Proc.*, 1522 (2013) pp. 508–517.
32. A.A.M. Yunus, A.H.M. Murid and **M.M.S. Nasser**, Radial slits maps of unbounded multiply connected regions, *AIP Conf. Proc.*, 1522 (2013) pp. 132–139.
33. Ali W. K. Sangawi, Ali H.M. Murid & **M.M.S. Nasser**, Annulus with circular slit map of bounded multiply connected regions via integral equation method, *Bulletin of the Malaysian Mathematical Sciences Society*, 35 (4) (2012) 945–959.
34. Ali W. K. Sangawi, Ali H.M. Murid & **M.M.S. Nasser**, Parallel slits map of bounded multiply connected regions, *Journal of Mathematical Analysis and Applications*, 389 (2012) 1280–1290.
35. Arif A.M. Yunus, Ali H.M. Murid & **M.M.S. Nasser**, Conformal mapping of unbounded multiply connected region onto canonical slit regions, *Abstract and Applied Analysis*, Volume 2012 (2012), Article ID 293765, 29 pages.
36. Ali W. K. Sangawi, Ali H.M. Murid & **M.M.S. Nasser**, Circular slits map of bounded multiply connected regions, *Abstract and Applied Analysis*, Volume 2012 (2012), Article ID 970928, 26 pages.
37. **M.M.S. Nasser**, Ali H.M. Murid & Samer A.A. Al-Hatemi, A boundary integral equation with the generalized Neumann kernel for a certain class of mixed boundary value problem, *Journal of Applied Mathematics*, Volume 2012 (2012), Article ID 254123, 17 pages.

38. Ali W. K. Sangawi, Ali H.M. Murid & **M.M.S. Nasser**, Linear integral equations for conformal mapping of bounded multiply connected regions onto a disk with circular slits, *Applied Mathematics and Computation*, 218 (2011) 2055–2068.
39. **M.M.S. Nasser**, Boundary integral equations for potential flow past multiple aerofoils, *Computational Methods and Function Theory*, 11 (2011) 375–394.
40. **M.M.S. Nasser**, Numerical conformal mapping of multiply connected regions onto the second, third and fourth categories of Koebe’s canonical slit domains, *Journal of Mathematical Analysis and Applications*, 382 (2011) 47–56.
41. **M.M.S. Nasser**, A.H.M. Murid, M. Ismail & E.M.A. Alejaily, Boundary integral equations with the generalized Neumann kernel for Laplace’s equation in multiply connected regions, *Applied Mathematics and Computation*, 217 (2011) 4710–4727.
42. **M.M.S. Nasser**, A nonlinear integral equation for numerical conformal mapping, *Advances in Pure and Applied Mathematics*, 1 (2010) 47–64.
43. **M.M.S. Nasser**, Numerical conformal mapping via a boundary integral equation with the generalized Neumann kernel, *SIAM Journal on Scientific Computing*, 31 (2009) 1695–1715.
44. **M.M.S. Nasser**, A boundary integral equation for conformal mapping of bounded multiply connected regions, *Computational Methods and Function Theory*, 9 (2009) 127–143.
45. **M.M.S. Nasser**, The Riemann-Hilbert problem and the generalized Neumann kernel on unbounded multiply connected regions, *The University Researcher (IBB University Journal)*, 20 (2009) 47–60.
46. **M.M.S. Nasser**, A.H.M. Murid & Z. Zamzamir, A boundary integral method for the Riemann–Hilbert problem in domains with corners, *Complex Variables and Elliptic Equations*, 53 (2008) 989–1008.
47. R. Wegmann & **M.M.S. Nasser**, The Riemann-Hilbert problem and the generalized Neumann kernel on multiply connected regions, *Journal of Computational and Applied Mathematics*, 214 (2008) 36–57.
48. **M.M.S. Nasser**, Numerical solution of the Riemann–Hilbert problem, *Punjab University Journal of Mathematics*, 40 (2008) 9–29.
49. **M.M.S. Nasser**, Boundary Integral Equations with the Generalized Neumann Kernel for the Neumann Problem, *Matematika*, 23 (2007) 83–98.
50. **M.M.S. Nasser**, A.H.M. Murid & N.S. Amin, A boundary integral equation for the 2D external potential flow, *International Journal of Applied Mechanics and Engineering*, 11 (2006) 61–75.
51. R. Wegmann, A.H.M. Murid & **M.M.S. Nasser**, The Riemann-Hilbert problem and the generalized Neumann kernel, *Journal of Computational and Applied Mathematics*, 182 (2005) 388–415.
52. A.H.M. Murid, **M.M.S. Nasser** & N.S. Amin, A boundary integral method for the planar external potential flow around airfoils, *Jurnal Teknologi*, 42(C) (2005) 29–42.
53. A.H.M. Murid & **M.M.S. Nasser**, Eigenproblem of the generalized Neumann kernel, *Bulletin of the Malaysian Mathematical Science Society*, 26 (2003) 13–33.
54. M.R.M Razali & **M.M.S. Nasser**, Numerical experiments on eigenvalues of weakly singular integral equations using product Simpson’s rule, *Matematika*, 18 (2002) 9–20.

PARTICIPATION IN SEMINARS, CONFERENCES, WORKSHOPS, ETC.

– Conferences and Workshops

1. **Presenter**, The complex analysis toolbox: new techniques and perspectives (Workshop: CATW01), Isaac Newton Institute for Mathematical Sciences, University of Cambridge, Cambridge, UK, September 9-13, 2019. Title of the talk: “PlgCirMap: A MATLAB toolbox for computing the conformal maps from polygonal multiply connected domains onto circular domains”.
2. **Presenter**, Seminar on Computational Geometry, University Turku, Turku, Finland, August 9, 2019. Title of the talk: “Conformal capacity and generalized condensers”.

3. **Presenter**, The 12th International ISAAC congress, University of Aveiro, Aveiro, Portugal, July 29-August 2, 2019. Title of the talk: “Numerical computation of conformal capacity of generalized condensers”.
4. **Presenter**, The 19th International Conference on Analytic Functions and Related Topics (AF&RT’18), University of Rzeszów, Rzeszów, Poland, June 25-29, 2018. Title of the talk: “Numerical conformal mappings onto elongated domains”.
5. **Presenter**, ANZIAM Conference 2018, Tasmania University, Hobart, Tasmania, Australia, February 4-8, 2018. Title of the talk: “A fast numerical method for ideal fluid flow in domains with multiple stirrers”.
6. **Presenter**, International Conference in Mathematics and Applications (ICMA-MU 2016), Mahidol University, Bangkok, Thailand, December 17-19, 2016. Title of the talk: “Numerical computing of preimage domains of canonical slit domains”.
7. **Plenary talk**, Boundary Value Problems, Functional Equations and Applications, 3rd Meeting, University of Rzeszow, Rzeszow, Poland, 20-23 April 2016. Title of the talk: “The Riemann-Hilbert problem on multiply connected domains”.
8. **Presenter**, The International Congress on Industrial and Applied Mathematics (ICIAM 2015), China National Convention Center, Beijing, China, August 10-14, 2015. Two talks entitled: “Fast solution of the boundary integral equations with the generalized Neumann kernel” and “Fast computation of conformal slit maps”.
9. **Invited Speaker**, AMMP Workshop June 2013: Conformal geometry in mapping, imaging and sensing, Imperial College London, London, UK, June 20-21, 2013. Title of the talk: “A fast numerical method for conformal mapping of multiply connected regions”.
10. **Presenter**, Computational Methods and Function Theory (CMFT 2013), Shantou University, Shantou, Guangdong, China, June 10-14, 2013. Title of the talk: “Fast Numerical Conformal Mapping of Multiply Connected Regions”.
11. **Presenter**, Second Math-Days of King Saud University (SMD 2012), King Saud University, Riyadh, Saudi Arabia, March 14-15, 2012. Title of the talk: “The boundary integral equations with the generalized Neumann kernel”.
12. **Presenter**, Third International Conference on Research and Education in Mathematics, The Legend Hotel, Kuala Lumpur, Malaysia, April 10-12, 2007. Title of the talk: “Integral Operator with the Generalized Neumann Kernel in Domains with Corners”.
13. **Presenter**, Twelfth National Symposium on Mathematical Sciences, IIUM, Kuala Lumpur, Malaysia, December 23-24, 2004. Title of the talk: “An Integral Equation for the External Potential Flow around Multi-Element Obstacles”.
14. **Presenter**, Eleventh National Symposium on Mathematical Sciences, UMS, Sabah, Malaysia, December 22-24, 2003. Title of the talk: “The Numerical Evaluation of the Hilbert Transform on Smooth Jordan Curves using a Fredholm Integral Equation”.
15. **Presenter**, International Conference on Research and Education in Mathematics, UPM, Selangor, Malaysia, April 2-4, 2003. Title of the talk: “A Fredholm Integral Equation of the Second Kind for the Exterior Riemann Problem”.
16. **Presenter**, Tenth National Symposium on Mathematical Sciences, UTM, Johor, Malaysia, December 23-24, 2002. Title of the talk: “Solving Riemann problem using Fredholm integral equation of the second kind”.