# Dr. Naved Akhtar



Dr. Naved Akhtar joined the Department of Mathematics, Faculty of Natural Sciences, Jamia Millia Islamia (A Central University), New Delhi (INDIA) on April 13, 2023, as an Assistant Professor. He has also worked as an Assistant Professor (Contractual) in the Department of Applied Sciences and Humanities, Faculty of Engineering & Technology, Jamia Millia Islamia, New Delhi, India from August 2017 to June 2022 and in the Department of Mathematics, Jamia Millia  Islamia, New Delhi from September 2022 to April 12, 2023. He did his Ph.D. on the topic "Mathematical Modelling for arresting of Multiple Cracks in an Infinite Plate" from Department of Mathematics, Jamia Millia Islamia, New Delhi in 2017. He has been awarded with Basic Scientific Research (BSR) Fellowship in Science for Meritorious Students (JRF in 2013 and SRF in 2015). He has also cleared National Eligibility Test (NET) with 56 All India Rank (AIR) in Mathematical Sciences conducted by UGC-CSIR in 2013 and Graduate Aptitude Test in Engineering (GATE) with 412-AIR in Mathematics conducted by IIT in 2012.

| | |
|---|---|
| Name | Dr. Naved Akhtar |
| Designation: | Assistant Professor |
| Office Address: | Department of Mathematics, Faculty of Natural Sciences, Jamia Millia Islamia New Delhi-110025. |
| Email (Primary): | nakhtar4@jmi.ac.in (Primary)  naved.a86@gmail.com (Secondary) |
| Field(s) of Specialization: | Fracture Mechanics, Special Functions, Applied Mathematics. |

## EMPLOYMENT PROFILE

- Assistant Professor from 13 April, 2023 to till date in Department of Mathematics, Jamia Millia Islamia New Delhi.

- Assistant Professor (Contractual) from September, 2022 to 12 April, 2023 in Department of Mathematics, Jamia Millia Islamia New Delhi.

- Guest Faculty (Mathematics) in the Department of Applied Sciences and Humanities, Faculty of Engineering & Technology, Jamia Millia Islamia, New Delhi, during academic sessions 2020-21 and 2021-22.

- Assistant Professor (Contractual) from August-2017 to May-2018, July-2018 to May-2019 and August-2019 to May-2020 in the Department of Applied Sciences and Humanities, Faculty of Engineering & Technology, Jamia Millia Islamia, New Delhi.

## ACADEMIC QUALIFICATIONS

- **High School** from U.P. Board, Allahabad in 2003.

- **Intermediate** from U.P. Board, Allahabad in 2005.

- **B. Sc.** from Jamia Millia Islamia, New Delhi in 2008**.**

- **M. Sc. Tech.** from Jamia Millia Islamia, New Delhi in 2011.

- **Ph. D.** entitled **"Mathematical Modelling for arresting of Multiple Cracks in an Infinite Plate"** from Department of Mathematics, Jamia Millia Islamia, New Delhi in 2017.

## NATIONAL LEVEL EXAMS QUALIFIED

- **National Eligibility Test (NET)** in Mathematical Sciences with 56-AIR in June 2013.

- **Graduate Aptitude Test in Engineering (GATE)** in Mathematics (MA) with 412-AIR in February 2012.

## FELLOWSHIP

- **Junior Research Fellowship (JRF)** under the **Basic Scientific Research (BSR) Fellowship in Science for Meritorious Students** scheme by University Grant Commission (UGC), New Delhi on 12th September, 2013.

- **Senior Research Fellowes (SRF)** under UGC-BSR (DRS-1) scheme on 12th September, 2015.

## COURSES TAUGHT AT POSTGRADUATE/ UNDERGRADUATE LEVELS

| Undergraduate level | Postgraduate level |
|---|---|
| Calculus | Advanced Mathematics |
| Geometry of Two and Three Dimensions | Theory of Differential Equations |
| Integral Transforms and Applications | Mathematics in Electronics |
| Integral Equations and Calculus of Variations | Computational Methods and Special Functions |
| Numerical Methods | Random Variables and Stochastic Process |
| Complex Analysis | |
| Engineering Mathematics-I | |
| Engineering Mathematics-II | |
| Engineering Mathematics-III | |
| Random Variables and Graph Theory | |
| Operations Research | |
| Data Structures | |
| Programming in C | |
| Programming Lab: Numerical Methods | |

## WORKSHOPS / CONFERENCES ATTENDED

- 4th BYMAT Conference held at Universitat Politecnica de Valencia, Spain (Online) during 09-11 November 2022.

- 11th Global Conference on Materials Science and Engineering (CMSE-2022) held at Shenzhen, China (Online) during 16-19 September 2022.

- International Conference on Dynamical Systems and Numerical Methods (ICDSNM-2022) held at the Department of Mathematics, Jamia Millia Islamia, New Delhi-110025 during 20-21 May 2022.

- 4th International Conference on Material Strength and Applied Mechanics (MSAM-2021) held at China (Online) during 16-19 August 2021.

- International Conference on Special Functions and Applications (ICSFA-2020) held at the Department of Mathematics & Computer Science, Babu Banarasi Das University, Lucknow, India during 21-23 December 2020.

- International Conference on Differential Geometry, Algebra, Analysis held at the Department of Mathematics, Jamia Millia Islamia, New Delhi-110025, India during 15-17 November 2016.

- National Workshop on Analysis, Differential Equations & Applications held at the Department of Mathematics, Mohanlal Sukhadiya University, Udaipur (Rajasthan), India during 27-29 February 2016.

- International Conference on Algebra, Geometry, Analysis and their Applications held at the Department of Mathematics, Jamia Millia Islamia, New Delhi-110025, India during 25-27 November 2014.

- Workshop on Mathematics and its Application held at the Department of Mathematics, Jamia Millia Islamia, New Delhi-110025, India (2012).

## ACADEMIC/ADMINISTRATIVE RESPONSIBILITIES

- Chaired a session entitled "Computational Methods, Modeling, and Numerical Simulation" in *the 4th International Conference on Material Strength and Applied Mechanics (MSAM-2021)* held at Beijing, China during 16-19 August 2021(Online).

- Member, Hospitality Committee in *International Conference on Differential Geometry, Algebra, Analysis* held at Department of Mathematics, Jamia Millia Islamia, New Delhi-110025, India during 15-17 November 2016.

- Member, Hospitality Committee in *International Conference on Algebra, Geometry, Analysis and their Applications* held at Department of Mathematics, Jamia Millia Islamia, New Delhi-110025, India during 25-27 November 2014.

## RESEARCH PUBLICATIONS

- **N. Akhtar**, S. Hasan and S. Shekhar, "A solution of multiple crack problem under the influence of linear stress distribution and coalesced yield zones", *Journal of Applied Mechanics and Technical Physics (Springer Link),* Volume 64, Issue 1 (2023), pp. 118- 130, DOI: https://doi.org/10.1134/S0021894423010133, ISSN(P) 0021-8944, ISSN(E) 1573-8620.

- M. I. Qureshi, **Naved Akhtar,** Iftikhar Husain and Jahan Ara, "Closed form expressions for curved surface area of revolution of hyperbolas: A hypergeometric function approach", *Mathematics for Applications*, Volume 11, Issue 2 (2022), pp. 169-180, DOI: 10.13164/ma.2022.13, ISSN(P) 1805-361, ISSN(E) 1805-3629.

- **N. Akhtar**, S. Hasan and S. Shekhar, "Mathematical modelling for multiple straight cracks with coalesced yield zones", *Engineering Solid Mechanics,* Volume 10, Issue 4 (2022), pp. 311-324, DOI: 10.5267/j.esm.2022.6.006, ISSN(P) 2291-8744, ISSN(E) 2291-8752.

- S. Hasan, **N. Akhtar** and S. Shekhar**,** "Strip yield model for multiple straight cracks with coalesced yield zones: A theoretical study", *Strength Fracture and Complexity*, Volume 14, Issue 2 (2022), pp. 59-73, DOI: 10.3233/SFC-210276*,* ISSN(P) 1567-2069, ISSN(E) 1875-9262.

- S. Shekhar, **N. Akhtar** and S. Hasan, "Study of load bearing capacity of an infinite sheet weakened by multiple collinear straight cracks with coalesced yield zones", *Materials Science-Poland,* Volume 39, Issue 2 (2021), pp. 265-284, DOI: https://doi.org/10.2478/msp-2021-0023, ISSN 2083-134X.

- **N. Akhtar** and S. Hasan, "Modified Dugdale model for multiple circular arc-cracks with unified plastic zones: A complex variable approach". *Materials Physics and Mechanics,* Volume 47, Issue 2 (2021), pp. 219-236, DOI: 10.18149/MPM.4722021_5 ISSN 1605-8119.

- M. I. Qureshi, **Naved Akhtar** and Dilshad Ahamad, "Analytical expressions for curved surface area of revolution and arc-length of an ellipse: A hypergeometric mechanism", *Transactions Issue Mathematics, Azerbaijan National Academy of Sciences,* Volume 40, Issue 1 (2020), pp. 152-160, ISSN(P) 2306-2193, ISSN(E) 2617-7900.

- S. Hasan, S. Shekhar and **N. Akhtar**, "Study on three unequal straight cracks with coalesced yield zones: A case of parabolic stress distribution". *Jmi International Journal of Mathematical Sciences*, Volume 10 (2019), pp. 57–70, ISSN 0976-5913.

- M. I. Qureshi, **Naved Akhtar** and Dilshad Ahamad, "Analytical expressions for arc-length of hyperbola: A hypergeometric approach", *International Journal of Computational Engineering Research (IJCER),* Volume 9, Issue 6 (2019), pp. 44-52 ISSN 2250-3005.

- M. I. Qureshi, **Naved Akhtar** and Dilshad Ahamad, "Analytical expression for the arc-length of an ellipse: A hypergeometric mechanism", *International Journal of Research and Analytical Reviews (IJRAR),* Volume 6, Issue 1 (2019), pp. 494-498, ISSN(P) 2349-5138, ISSN(E) 2348-1269.

- **N. Akhtar** and S. Hasan**,** "Four circular-arc cracks with coalesced yield zones in an infinite plate: A theoretical approach", *Strength Fracture and Complexity* Volume 11, Issue 4 (2018), pp. 279-294, DOI: 10.3233/SFC-180229, ISSN(P) 1567-2069, ISSN(E) 1875-9262.

- **N. Akhtar** and S. Hasan, "Assessment of the interaction between three collinear unequal straight cracks with unified yield zones", *AIMS Materials Science*, Volume 4, Issue 2 (2017), pp. 302-316, DOI:10.3934/matersci.2017.2.302, ISSN 2372-0484.

- S. Hasan and **N. Akhtar**, "An analytical solution for three symmetrical collinear straight cracks with coalesced yield zones: A complex variable approach". *Global Journal of Pure and Applied Mathematics*, Volume 11, Issue 5 (2015), pp. 2825–2842, ISSN 0973-1768.

- S. Hasan and **N. Akhtar,** "Mathematical model for three equal collinear straight cracks: A modified Dugdale approach", *Strength Fracture and Complexity* Volume 9, Issue 3 (2015), pp. 211-232, DOI.10.3233/SFC-160189, ISSN(P) 1567-2069, ISSN(E) 1875-9262.

- **Naved Akhtar** and S. Hasan, "Modified Dugdale model for three equal collinear straight cracks: A theoretical analysis", *International Journal of Applied Engineering Research*, Volume 10, Issue 19 (2015), pp. 40010-40020, ISSN 0973-4562.

- S. Hasan, **N. Akhtar**, "Dugdale model for three equal collinear straight cracks: An analytical approach", *Theoretical and Applied Fracture Mechanics (Elsevier),* Volume 78 (2015), pp. 40-50, http://dx.doi.org/10.1016/j.tafmec.2015.04.002, ISSN 0167-8442.

## PAPER PRESENTATION IN CONFERENCES

- "Applications of modified Dugdale model to multiple collinear straight cracks with coalesced yield zones", in *the 4th BYMAT Conference* held at Universitat Politecnica de Valencia, Spain during 09-11 November 2022.

- "Load Bearing Capacity Analysis of an Infinite Plate Weakened by Multiple Collinear Straight Cracks with Coalesced Yield Zones", in *the 11th Global Conference on Materials Science and Engineering (CMSE-2022)* held at Shenzhen, China during 16-19 September 2022.

- "Mathematical modelling for multiple straight cracks  with coalesced yield zones", in *International Conference on Dynamical Systems and Numerical Methods (ICDSNM-2022)* held at Department of Mathematics, Jamia Millia Islamia, New Delhi-110025 during 20-21 May 2022.

- "Mathematical Modelling for Multiple Straight Cracks with Coalesced Yield Zones", in *the 4th International Conference on Material Strength and Applied Mechanics (MSAM-2021)* held at China during 16-19 August 2021.

- "Closed form expressions for curved surface area of revolution of hyperbolas: A hypergeometric function approach", in *International Conference on Special Functions and Applications (ICSFA-2020)* held at Department of Mathematics & Computer Science, Babu Banarasi Das University, Lucknow, India during 21-23 December 2020.

- "Dugdale model for four circular arc-cracks with unified yield zones: A complex variable approach", *International Conference on Differential Geometry, Algebra, Analysis* held at Department of Mathematics, Jamia Millia Islamia, New Delhi-110025, India during 15-17 November 2016.

- "Three straight cracks with coalesced yield zone solution using Complex integration approach", in *National Workshop on Analysis, Differential Equations & Applications* held at

Department of Mathematics, Mohanlal Sukhadiya University, Udaipur (Rajasthan), India during 27-29 February 2016.

- "Analytical solution of three symmetrical collinear straight cracks: a complex variable approach", in *International Conference on Algebra, Geometry, Analysis and their Applications* held at Department of Mathematics, Jamia Millia Islamia, New Delhi-110025, India during 25-27 November 2014.