# Dr. Anand Kumar Tiwari

**Associate Professor, Department of Appled Sciences**
**Indian Institute of Information Technology Allahabad (India)**
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## Research Interest

Graph Theory (Algebraic, Chemical, Spectral, Topological).

## PhD Details

- Title of Thesis: Semi-equivelar maps and $d$-covered triangulations of surfaces
- Department: Mathematics
- Institute: Indian Institute of Technology Patna, India
- Date of Registration: 9 Jul 2009
- Date of Submission: 25 Sep 2013
- Date of Defence: 27 Feb 2014
- CGPI (Course work): 8.64 / 10

## Academic Record

| Program | Institution/Board | %/CGPA | Year |
|---|---|---|---|
| High school | BNSD Shiksha Niketan Inter college, Kanpur, Uttar Pradesh/UP Board | **79.6%** | 2000 |
| Intermediate | BNSD Shiksha Niketan Inter college, Kanpur, Uttar Pradesh/UP Board | **77.2%** | 2002 |
| BSc | PPN College Kanpur, Uttar Pradesh/CSJM Kanpur University | **60.2%** | 2005 |
| MSc | Banaras Hindu University, Uttar Pradesh | **7.9/10** | 2007 |

## Experience and employment records

- Associate Professor (24 February, 2026 - till date), Department of Applied Sciences, Indian Institute of Information Technology Allahabad, Allahabad (U.P.).
- Assistant Professor (15 April, 2021 - 23 February, 2026), Department of Applied Sciences, Indian Institute of Information Technology Allahabad, Allahabad (U.P.), Level-12 (AGP 8000).
- Assistant Professor (01 February 2016 - 14 April 2021), Department of Applied Sciences, Indian Institute of Information Technology Allahabad, Allahabad (U.P.), Level-11 (AGP 7000).
- Assistant Professor (07 March 2015 - 29 January 2016), Department of Mathematics, Birla Institute of Technology Mesra, Ranchi (Jharkhand), (AGP 6000).
- Lecturer (10 October 2013 - 04 March 2015), Department of Mathematics, IIIT RK Valley, Rajiv Gandhi University of Knowledge Technologies (A.P.).

## Awards (02)

- CSIR NET-JRF in Mathematical Science with All India Rank-79, June-2009.
- GATE in Mathematics with All India Rank 341 (87.11 percentile), December-2009.

## List of Publications (16)

- A. Singh, Y. Singh, **A. K. Tiwari**, Distance spectra of power graph over metacyclic group, Indian Journal of Pure and Applied Mathematics, Accepted. **SCIE**
- Y. Singh, A. Singh, **A. K. Tiwari**, On the Hosoya Polynomial of Joined Union Graph: Theory and Code, National Academy Science Letters, Accepted. **SCIE**
- Y. Singh, **A. K. Tiwari**, S. Kushwaha, Hamiltonicity of doubly semi-equivelar maps on the torus, Analele Stiintifice ale Universitatii Ovidius Constanta-Seria Matematica, 229-268, 34(2026). **SCIE**
- A. Singh, Y. Singh, **A. K. Tiwari**, S. Pirzada, On the $A_\alpha$ matrix over finite metacyclic groups, Proceedings of the National Academy of Sciences, India Section A: Physical Sciences, 1-13, 96(2026). **SCIE**
- Y. Singh, **A. K. Tiwari**, F. Ali, M.S. Pandey, On the power graph of a certain gyrogroup, Asian-European J of Mathematics, 19(2026). **ESCI/Scopus**
- Y. Singh, **A. K. Tiwari**, Enumeration of doubly semi-equivelar maps on the Klein bottle. Indian Journal of Pure and Applied Mathematics, 56(2025), 571-594. **SCIE**
- **A. K. Tiwari**, Y. Singh, A. Tripathi, 2-semi equivelar maps on the torus and Klein bottle with few vertices. Communications in Combinatorics and Optimization, 10(2025), 877-904. **ESCI/Scopus**
- A. Tripathi, R. Dubey, **A. K. Tiwari**, S. Dhawan, Some essential aspects of spectral methods and their applications to PDEs. Mathematics in Engineering, Science and Aerospace, 15(2024), 323-345. Scopus
- A. Tripathi, **A. K. Tiwari**, S. Dhawan, R. Dubey, Computational method to solve Burgers' equation with periodic boundary conditions. Nonlinear Studies, 31(2024), 529-542. Scopus
- R. Bhatia, A. Tripathi, **A. K. Tiwari**, P. Joshi, Computational study of modified regularised and regularised long wave equations using trigonometric splines. Mathematics in Engineering, Science and Aerospace, 15(2024), 323-345. Scopus
- Y. Singh, **A. K. Tiwari**, Doubly semi-equivelar maps on the plane and the torus. AKCE International J of Graphs and Combinatorics, 3(2022), 296-310. **SCIE**
- **A. K. Tiwari**, A. K. Tripathi, Almost semi-equivelar maps on the torus and Klein bottle, International J. Math. Combin. 4(2021), 34-40.
- **A. K. Tiwari**, A. Tripathi, Y. Singh, P. Gupta: Doubly semi-equivelar maps on the torus and the Klein bottle, Journal of Mathematics, 2020. **SCIE**
- **A. K. Tiwari**, A. K. Upadhyay: Semi-equivelar maps on the torus and the Klein bottle with few vertices, Mathematica Slovaca, 67(2017), 1(1-14). **SCIE**
- **A. K. Tiwari**, A. K. Upadhyay: Semi-equivelar maps on the surface of Euler characteristic -1, Note di Matematica, 37(2017), 2(91-102). **ESCI/Scopus**
- A. K. Upadhyay, **A. K. Tiwari**, D. Maity: Semi-equivelar maps, Contributions to Algebra and Geometry, 55(2012), 229-242. **ESCI/Scopus**

## Article in arXiv (02)

- F. H. Lutz, T. Sulanke, **A. K. Tiwari**, A. K. Upadhyay: Equivelar and d-Covered triangulations of Surfaces. I, arXiv:1001.2777. Graphs and Combinatorics, Accepted. **SCIE**
- A. Singh, Y. Singh, **A. K. Tiwari**: $RD_\alpha$-Spectra of Joined Union Graphs with Applications to Power Graphs of Finite Groups, arXiv:2604.14195

## Book Chapter (01)

- A. Tripathi, R. Bhatia, P. Joshi, and A. K. Tiwari, A Computational Study of Time-dependent Nonlinear Schrodinger Equation with Cubic Nonlinearity, Lecture Notes In Networks & Systems, Proceedings of the Tenth International Conference on Mathematics and Computing: ICMC 2024, Volume 2, Springer Nature, Print ISBN 978-981-97-2068-2, 139-158, 2024.

## Conference/Workshop Organized (03)

- Conference on Graph Theory and Additive Combinatorics (CGAC-2024), IIIT Allahabad, May 03-05, 2024. Website URL: https://cgac.iiita.ac.in/
- Workshop on Real Analysis and Topology (WRAT-2024), IIIT Allahabad, Sept 06-08, 2024. Website URL: https://wrat.iiita.ac.in/
- Workshop on Training in Algebra and Analysis (TAA-2026), IIIT Allahabad, June 15-17, 2026. Website URL: https://taa.iiita.ac.in/

## Papers in International/National Conferences (05)

- Paper Title: Semi equivelar and 2-semi-equivelar maps, The 35th Workshop in Topological Graph, November 7-10, 2023, Yokohama National University, Yokohama, Japan.
- Paper Title: Semi equivelar and doubly semi-equivelar maps on the closed surfaces, International Conference on graphs, networks and combinatorics, January 10-12, 2023, Ramanujan College, Delhi University.
- Paper Title: Semi equivelar map and d-covered triangulations, National Conference on Recent Advances in Mathematics, December 12-14, 2012, Rani Durgawati University, Jabalpur.
- Paper Title: On upper bound for d-covered Triangulations of Surfaces, Indian Mathematical Society, 81 (1-4), 2012.
- Paper Title: On $d$-covered triangulations of closed surfaces, National Conference & Workshop on High-Performance Computing & Application, February 8-10, 2010, Banaras Hindu University, Varanasi.

## Invited Talks/Lectures In Conferences/Workshops (06)

- Invited speaker in International conference on Mathematical Techniques in Application of Science & Technology, December 23, 2021, Dr. C.V. Raman University, Kota, Bilaspur, India. (Title of the talk: Semi-equivelar and doubly semi-equivelar maps).
- Invited speaker in refresher course on Advances in Mathematical and Physical Sciences, November 29, 2021, at Dr Harising Gour central university, Sagar, MP, India.(Title of the talk: Maps on surfaces).
- Invited speaker in 27th International Conference of International Academy of Physical Sciences (CONIAPS XXVII), October 26-28, 2021 at National Institute of Technology Jamshedpur, Jamshedpur, JH, India. (Title of the talk: Some symmetric maps on closed surfaces).
- Invited talk on "Tiling of non planer surfaces and its application", January 30-31, 2020 at Ramswaroop Memorial University, Lucknow, UP, India.
- Invited talk on "Triangulation of surfaces and its application in Engineering ", September 09, 2019, at Rajkiya Engineering College, Banda, UP, India.
- Invited speaker in the Impact of Recent Advances in Applied Science on Engineering, February 19-23, 2019 at Rajkiya Engineering College, Banda, UP, India. (Title of the talk-Equivelar and semi-equivelar maps: A generalization of Platonic solids and Archimedean solids).

## Session Chaired in Conferences/Workshops (06)

- International Seminar on Applications of Mathematics in Science & Technology (ISAMST-2024), Dec 19 - 20, 2024, held at Guru Ghasidas Vishwavidyalaya, Bilaspur, Chattisgarh, India.

- Workshop on Fractal Geometry and Related Fields, Sep 25 - Oct 01, 2022, held at IIIT Allahabad, Prayagraj, UP, India.
- National Conference of Academy of Mathematics-RAMAA-2022, May 07-08, held at Banaras Hindu University, Banaras, UP, India.
- Workshop on Functional Analysis and its Applications, Jan 14-16, 2022, held at IIIT Allahabad, Prayagraj, UP, India.
- Workshop on Geometry of Banach Spaces and its Application, Dec 31, 2021-Jan 2, 2022, held at IIIT Allahabad, Prayagraj, UP, India.
- Refresher course on Advances in Mathematical and Physical Sciences, November 16-30, 2021, held at Dr Harising Gour central university, Sagar, MP, India.

## Project (Institute/Sponsored)/Sponsored fund (02)

- A classification of doubly semi-equivelar maps for lower genus surfaces, Seed money projectfunded by IIIT Allahabad, INR 3,73,750 (2018-20).
- Vritika (No. AV/VRI/2022/0211), Funded by Science & Engineering research board (SERB) India, INR 60,000 (Nov - Dec 2022).

## PhD Guided/Ongoing (03)

- Yogendra Singh(RSS2018503), A study of doubly semi-equivelar maps on the plane, torus, and Klein bottle, Awarded 2024.
- Aditya Singh (RSS2023003), ongoing, joined in January 2023.
- Anmol Chugh (RSS2025003), ongoing, joined in January 2025.

## Intern/project students (04)

- Avinash Kumar, internship under Vritika (SERB), November 24-December 23, 2022.
- Deb Sarkar, Winter internship under Vritika (SERB), November 18-December 17, 2022.
- Vinita Meena (IBM2014021), Summer internship, July 2017 - September 2017.
- Zubin Singh (IBM2014022), Summer internship, July 2017 - September 2017.

## Abroad visits (01)

- National Yokohama University, Yokohama, Japan, During November 6-9, 2023.

## Member of Professional Bodies (02)

- Indian Mathematical Society (Unique Membership No. L/2016/109)
- Kerala Mathematical Association

## Reviewer

- Discrete Applied Mathematics: Elsevier
- National Academy Science Letters: Springer
- Journal of Indian Mathematical Society
- Proceedings of the National Academy of Sciences, Physical Sciences: Springer
- MathSciNet

## Research ID's

- Google Scholar ID: https://scholar.google.co.in/citations?user=loC7N5oAAAAJ
- Scopus Scholar ID: https://www.scopus.com/authid/detail.uri?authorId=56193030800
- ORCID ID: https://orcid.org/0000-0002-7038-1801
- Vidawan ID: http://iiita.irins.org/profile/102931

## Department/ Institute/ Outside Institute Responsibilities

- Member (Special Invitee), PhD Research Degree Committee (RDC), AKTU UP, from 20th May 2026.
- Incharge, Departmental Website Committee, from 19th Jan 2026.
- Chairman, Accommodation Committee, Conference on Information Communication Technology (CICT), Dec 6-8, 2024.
- Member of Transport Committee, Computer Vision and Machine Intelligence (CVMI), Oct 19-20, 2024.
- Member of Campus decoration committee, IIITA Global Alumni Meet 2022, 2025
- Warden of Boys Hostel-II (IIIT Allahabad), from November 2018 to August 2021.
- Member of Departmental purchase committee.
- Member of Publishing Committee in Orientation Camp 2021.

## Courses Taught in Various Institutions (IIIT RK Valley, BIT Mesra, IIIT Allahabad)

- Univariate and Multivariate Calculus
- Modern Algebra
- Discrete Mathematics
- Convex Optimization
- Ordinary Differential Equation
- Complex Analysis
- Linear Algebra
- Number Theory
- Graph Theory
- Real Analysis
- Probability Theory
- Topology

## Personal Details

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|---|---|
| Date of Birth: | 10 July 1985 |
| Father's Name: | Late Mr. Chunni Lal Tiwari |
| Mother's Name: | Mrs. Mithila Tiwari |
| Language: | Hindi, English |
| Marital Status: | Married |
| Present Address: | 5257, CC-III, IIIT Allahabad, Jhalwa, Prayagraj-211015 (U.P.) |
| Permanent Address: | D-16 (D Block), IIIT Allahabad, Jhalwa, Prayagraj-211015 (U.P.) |

## Declaration

I do hereby declare that all the details furnished earlier are true to the best of my knowledge and belief.

Place: Prayagraj, Utter Pradesh (INDIA)

Date: June 22, 2026



(Anand Kumar Tiwari)