

CURRICULUM VITAE

Dr. Tahir Mahmood

S/O

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JOB OBJECTIVE

An ambitious, qualified, committed, and enthusiastic academic with a range of teaching experience, aiming to broaden horizons in the field of Algebra.

AREAS OF INTEREST

Algebraic Structures, Fuzzy Algebraic Structures, Soft Sets

ACADEMIC QUALIFICATION

Degree/Certificate	Institution	Session	Major Courses/Division
Ph.D. (Mathematics)	Quid-i-Azam University, Islamabad	2006-2012	Spectral Theory of Hilbert spaces, Homological Algebra-I, Theory of Semirings, Fuzzy Algebra, General Relativity, Numerical Solution of PD Eq.
Ph.D. Research Thesis Title: Some Characterizations of Hemirings by the Properties of Their Fuzzy Ideals			
M.Phil (Mathematics)	Quid-i-Azam University, Islamabad	2003-2005	Semigroup Theory, Near Rings, Theory of Group Actins, Theory of Group Graphs, Theory of Complex Manifolds, Banach Algebra, Ring Theory-I, Ring Theory-II. / 1 st Div
M.Sc. (Mathematics)	Govt. Post Graduate College Asghar Mall, Rawalpindi	1995-1997	1 st Div
B.A.	Govt. Degree College, Talagang.	1992-1994	1 st Div
F.A.	Govt. Degree College, Fteh Jang.	1990-1992	2 nd Div
SSC	Govt. High School, Chakwal.	1988-1990	1 st Div
B.Ed.	Allama Iqbal Open University, Islamabad	1997-1999	2 nd Div

Awards:

- 1) *Won Mathematics Olympiad in 2005 organized by Federal Directorate of Education Islamabad.*
- 2) *Won NRPB project "Similarity measures of picture hesitant fuzzy sets and their applications" at total cost of Rs.1382383/-, numbered No: 5833/Federal/NRPB/R&D/HEC/2016*
- 3) *Achieved Rs. 70,000/- Research Incentive Award from International Islamic University Islamabad in the Year 2016.*
- 4) *Achieved Rs. 60,000/- Research Incentive Award from International Islamic University Islamabad in the Year 2017.*
- 5) *Achieved Rs. 60,000/- Research Incentive Award from International Islamic University Islamabad in the Year 2018.*

Research Profile:

Research Interests:

Fuzzy Sets and Their Generalizations, Soft Sets, Rough Sets, Decision Making, Algebraic Structures.

Total Impact Factor: 227.151 (Published: 182.684, Accepted: 44.467).

Publications	Published	Accepted	Total
Total Publications	138	22	159
Total International Publications	121	20	141
Impact Factor Publications	75	16	91
HEC Recognized (X&Y) (Other Than Impact Factor Publications)	19	03	25

Students Supervised	BS	MS	Ph.D.
Degree Completed	02	46	06
Degree Continued	Nil	05	04

Conferences Attended	08
Conferences Organized	02

Departmental Duties (Other than Teaching):

- Time Table in charge since 2005
- Member and convener of Examination committee since 2005
- Member and convener of Admission committee since 2006
- Convener of space allocation committee of FBAS since 2017
- Convener of Examination committee of FBAS since 2017
- Convener of Seminar Committee since December 2019.

Some well-known international collaborators:

- 1) Dr. Young Bae Jun
- 2) Dr. Peide Liu
- 3) Dr. Florentin Smarandache
- 4) Dr. Nasruddin Hassan
- 5) Dr. Bijan Davvaz
- 6) Dr. Harish Garg
- 7) Dr. Bing Yuan Cao
- 8) Dr. Feng Feng
- 9) Dr. Janusz Sokol
- 10) Dr. Maslina Darus
- 11) Dr. Jun Ye
- 12) Dr. Aslihan Sezgin Sezer
- 13) Dr. Said Brumi
- 14) Dr. Shouzhen Zeng

Editorial Board Responsibilities:

1. Lead guest editor of the special issue “Decision Making Based on Intuitionistic Fuzzy Sets and their Generalizations” in “Journal of Mathematics”.
2. Member editorial board: Mathematical Problems in Engineering.
3. Member editorial board: International Journal of Neutrosophic Science.

Book Chapters:

1. Qaisar Khan, **Tahir Mahmood**, Khizar Hayat, Muhammad Arif, Valentina Emilia Balas, and Oana Geman. *Application of Single-Valued Neutrosophic Power Maclaurin Symmetric Mean Operators in MADM*. In: Balas V., Jain L., Balas M., Shahbazova S. (eds) *Soft Computing Applications. SOFA 2018. Advances in Intelligent Systems and Computing, vol 1222*. Springer, Cham. **(Published)**.
2. **Tahir Mahmood**, Qaisar Khan, Kifayat Ullah, Naeem Jan. *Single valued neutrosophic finite state machine and switchboard state machine*, *New Trends in Neutrosophic Theory and Applications, Volume II, Brussels, Belgium, EU, 2018*. **(Published)**.
3. **Tahir Mahmood** and Zeeshan Ali, *Schweizer–Sklar Muirhead Mean Aggregation Operators Based on Pythagorean Fuzzy Sets and Their Application in Multi-Criteria Decision-Making*, *PYTHAGOREAN FUZZY SET: THEORY AND APPLICATIONS*, Springer. **(Accepted)**.
4. **Tahir Mahmood** and Zeeshan Ali, *Multi-Granulation Single-Valued Neutrosophic hesitant fuzzy rough sets*, *DECISION MAKING WITH NEUTROSOPHIC SET: THEORY AND APPLICATIONS*, Springer. **(Accepted)**.

Conference Papers:

1. Kifayat Ullah, **Tahir Mahmood**, Naeem Jan, *Some averaging aggregation operators for t-spherical fuzzy sets and their applications in multi-attribute decision making*. In *Proceedings of the International Conference on Soft Computing & Machine Learning (ICSCML)*, Wuhan, China, 26–28 April 2019.
2. Said Broumi, Mohamed Talea, Assia Bakali, Guennoun Asmae, **Tahir Mahmood**, Florentin Smarandache and Kifayat Ullah, *NSPP: A Novel algorithm*

for neutrosophic shortest path problem , 2020 International Conference on Computer and Information Sciences, October 13-15, Aljouf, Kingdom of Saudi Arabia.

Published Papers:

- 1) Muhammad Shabir and **Tahir Mahmood**, Hemirings characterized by the properties of their fuzzy ideals with thresholds, Quasigroups and Related Systems (ISSN: 1561-2848), 18 (2010), 195 - 212. **(HEC Recognised)**.
- 2) Asghar Khan, Young Bae Jun and **Tahir Mahmood**, Generalized Fuzzy Interior Ideals in Abel Grassmann's Groupoids, Int. J. of Mathematics and Mathematical Sciences, (ISSN: 0161-1712), Volume 2010, Article ID 838392, 14 pages, **(HEC Recognised)**.
- 3) Muhammad Shabir and **Tahir Mahmood**, Characterizations of Hemirings by Interval Valued Fuzzy Ideals, Quasigroups and Related Systems, (ISSN:1561-2848), 19 (2011), 317-329. **(HEC Recognised)**.
- 4) Muhammad Shabir and **Tahir Mahmood**, On Interval Valued (α, β) -Fuzzy Ideals of Hemirings, East Asian Mathematical Journal, (ISSN:1226-6973), 27 (2011), No. 3, pp. 349-372.
- 5) Muhammad Shabir and **Tahir Mahmood**, Characterizations of Hemirings by $(\epsilon, \epsilon \vee q_k)$ -Fuzzy Ideals, Computers and Mathematics with Applications, (ISSN:0898-1221), 61 (2011) 1059-1078. **I. F. 2.670**.
- 6) Muhammad Shabir, Yasir Nawaz and **Tahir Mahmood**, Characterizations of Hemirings by $(\bar{\epsilon}, \bar{\epsilon} \vee \bar{q})$ -Fuzzy Ideals, Neural Computing and Applications, (ISSN:0941-0643), 21 (Suppl 1) (2012) S93–S103. **I. F. 1.168**.
- 7) Muhammad Shabir and **Tahir Mahmood**, Hemirings Characterized by Interval Valued $(\bar{\epsilon}, \bar{\epsilon} \vee \bar{q})$ -Fuzzy k -Ideals, Mathematica Aeterna, (ISSN:1314-3344), 2 (1) (2012) 1 - 19.
- 8) **Tahir Mahmood** and Muhammad Shabir Characterizations of h -hemiregular and h -semisimple Hemirings by interval valued fuzzy h -ideals, World Applied Science Journal, (ISSN:1818-4952), 17 (2012) 1821-1827.
- 9) Muhammad Shabir and **Tahir Mahmood**, Spectrum of $(\epsilon, \epsilon \vee q)$ -fuzzy prime h -ideals of a hemiring, World Applied Science Journal, (ISSN:1818-4952), 17 (2012) 1815-1820.
- 10) Muhammad Shabir, Noshin Malik and **Tahir Mahmood**, On Interval Valued Fuzzy h -ideals in Hemirings, East Asian Mathematical Journal, (ISSN:1226-6973), 28 (1) (2012) 49-62.
- 11) Muhammad Shabir, Noshin Malik and **Tahir Mahmood**, Characterizations of hemirings by the properties of their interval valued fuzzy ideals, Annals of Fuzzy Mathematics and Informatics, (ISSN:2093-9310), 3 (2) (2012) 229- 242.
- 12) Muhammad Shabir, Noshin Malik and **Tahir Mahmood**, On Interval Valued Fuzzy ideals in Hemirings, Annals of Fuzzy Mathematics and Informatics, (ISSN:2093-9310), 4(1) (2012) 49- 62.

- 13) **Tahir Mahmood**, *New Types of Interval Valued Fuzzy h-Ideals of Hemirings*, *World Applied Science Journal*, (ISSN:1818-4952), 18 (2012) 1883-1889.
- 14) **Tahir Mahmood** and Muhammad Shabir *Ideals Redefined to Characterize Hemirings*, *World Applied Science Journal*, (ISSN:1818-4952), 18 (2012) 1870-1882.
- 15) **Tahir Mahmood** and Muhammad Aslam, *On interval-valued $(\epsilon_\gamma, \epsilon_\gamma \vee q_\delta)$ -fuzzy k-ideals in hemirings*, *Neural Computing & Applications*, (ISSN:0941-0643), 21 (1)(2012) 231–244. **I. F. 1.168.**
- 16) Muhammad Shabir, **Tahir Mahmood** and Saqib Hussain, *Hemirings Characterized by Interval Valued $(\epsilon, \epsilon \vee q)$ -Fuzzy k-Ideals*, *World Applied Sciences Journal*, (ISSN:1818-4952) 20(12)(2012) 1678-1684.
- 17) **Tahir Mahmood**, *Hemirings Characterized by the properties of their $(\bar{\epsilon}, \bar{\epsilon} \vee \bar{q}_k)$ -fuzzy ideals*, *Iranian Journal of Science and Technology*, (ISSN:1028-6276), 37 (2013) 265-275. **I. F. 0.217.**
- 18) **Tahir Mahmood** and Muhammad Munir, *On Bipolar Fuzzy Subgroups*, *World Applied Sciences Journal*, (ISSN:1818-4952), 27(12)(2013) 1806-1811.
- 19) **Tahir Mahmood**, *Characterizations of h –Hemiregular and h –Semisimple Hemirings by Interval Valued $(\bar{\epsilon}, \bar{\epsilon} \vee \bar{q})$ -Fuzzy h –Ideals*, *The Nucleus*, (ISSN:0029-5698), 51(1)(2014) 19-27. **(HEC Recognised).**
- 20) Muhammad Shabir, Yasir Nawaz and **Tahir Mahmood**, *Characterizations of Hemirings by $(\epsilon, \epsilon \vee q)$ -Fuzzy Ideals*, *East Asian Mathematical Journal*, (ISSN:1226-6973), 31(2015) 001-018.
- 21) **Tahir Mahmood** and Khizar Hayat, *Characterizations of Hemi-Rings by their Bipolar-Valued Fuzzy h-Ideals*, *Information Sciences Letter*, (ISSN:2090-9551), 4(2) (2015) 51-59.
- 22) **Tahir Mahmood** and Usman Tariq, *Generalized k-Ideals in Semirings using Soft Intersectional Sets*, *International Journal of Algebra and Statistics*, (ISSN:2314-4548), 4(1) (2015) 20-38.
- 23) Muhammad Irfan Ali, **Tahir Mahmood**, M. Muti ur Rahman and M. Fahim Aslam, *On lattice ordered soft sets*, *Applied Soft Computing*, (ISSN:1568-4946) 36 (2015) 499-505 **I. F. 2.857.**
- 24) **Tahir Mahmood** and Asim Ejaz, *On Bipolar Valued Fuzzy k-Ideals in Hemirings*, *The Nucleus*, (ISSN:0029-5698), 52 (3) (2015) 115-122. **(HEC Recognised).**
- 25) **Tahir Mahmood**, Ayesha Waqas and M. A. Rana, *Soft Intersectional Ideals in Ternary Semirings*, *Science International*, (ISSN:1013-5316), 27 (5) 2015, 3929-3934. **(HEC Recognised).**
- 26) **Tahir Mahmood** and Khizar Hayat, *Applications of Soft Intersection Set in \mathcal{B} -Algebra via SI- \mathcal{B} - Ideals*, *International Journal of Algebra and Statistics*, (ISSN:2314-4548), 4(2) (2015) 57-62.
- 27) **Tahir Mahmood**, Saleem Abdullah and Qaisar Khan, *Regular Cubic*

Language and Regular Cubic Expression, Advances in Fuzzy Sets and Systems, (ISSN:0973-421X), 20(2) (2015) 97-132.

- 28) Saleem Abdullah, Wafa S. Al Shammakh, **Tahir Mahmood** and Muhammad Shahzad, Fuzzy soft set over a fuzzy topological space, *International Journal of Machine Learning and Cybernetics, (ISSN:1868-8071), 7 (2016) 491-499. I. F. 1.699.*
- 29) Khizar Hayat and **Tahir Mahmood**, Some Applications of Bipolar Soft Set: Characterizations of Two Isomorphic Hemi-Rings via BSI-h-Ideals, *British Journal of Mathematics and Computer Science, (ISSN:2231-0851), 13 (2) (2016) 1-21.*
- 30) **Tahir Mahmood**, Qaisar Khan and Mohsin Ali, Q-Single Valued Neutrosophic Sets, *Journal of New Theory, (ISSN:2149-1402), 13 (2016) 10-25.*
- 31) **Tahir Mahmood**, Faisal Mehmood and Qaisar Khan, Cubic Hesitant Fuzzy Sets and Their Applications to Multi Criteria Decision Making, *International Journal of Algebra and Statistics, (ISSN:2314-4548), 5 (1) (2016) 19-51.*
- 32) Khizar Hayat, Bing-Yuan Cao, **Tahir Mahmood** and Kalim Ul-Haq Tariq, Applications of double-framed soft ideals in BE-algebras, *New Trends in Mathematical Sciences, (ISSN:2147-5520), 4(2) (2016) 285-295.*
- 33) **Tahir Mahmood**, Saleem Abdullah, Muhammad Bilal and Saeed ur Rashid, Multi Criteria Decision Making Based on Bipolar Valued Fuzzy Sets, *Annals of Fuzzy Mathematics and Informatics, (ISSN:2093-9310), 11(6)(2016) 1003-1009.*
- 34) **Tahir Mahmood** and Qaisar Khan Interval Neutrosophic finite switchboard state machine, *Afrika Matematika, (ISSN:1012-9405),. 27 (2016) 1361-1376.*
- 35) **Tahir Mahmood**, Ayesha Waqas, Muhammad Afzal Rana and Usman Tariq, Generalized Soft Intersectional Ideals in Ternary Semirings, *Journal of Advance Research in Mathematics and Mathematical Sciences, (ISSN:2208-2409), 1(4) (2016) 1-9.*
- 36) **Tahir Mahmood**, Faisal Mehmood and Qaisar Khan, Some Generalized Aggregation Operators for Cubic Hesitant Fuzzy Sets and Their Applications to Multi Criteria Decision Making, *Punjab University Journal of Mathematics, (ISSN:1016-2526), 49 (1) (2017) 31-49 (HEC Recognised).*
- 37) **Tahir Mahmood**, Jun Ye and Qaisar Khan, Multiple Attribute Decision-Making Method under Hesitant Single Valued Neutrosophic Uncertain Linguistic Environment, *Journal of Inequalities and Special Functions, (ISSN:2217-4303), 2 (2017) 1-17.*
- 38) **Tahir Mahmood**, Jun Ye and Qaisar Khan, Vector Similarity Measures for Simplified Neutrosophic Hesitant Fuzzy Set and Their Applications, *Journal of Inequalities and Special Functions, (ISSN:2217-4303), 7 (4) (2016) 176-194.*
- 39) Khizar Hayat, **Tahir Mahmood** and Bing-Yuan Cao, On Bipolar Anti Fuzzy h-Ideals in Hemi-rings, *Fuzzy Information and Engineering, (ISSN:1616-8658), 9 (2017) 1-19.*
- 40) **Tahir Mahmood**, Saleem Abdullah, Saeed ur Rashid and Muhammad Bilal, Multicriteria Decision Making Based on Cubic sets, *Journal of New Theory, (ISSN:2149-1402), 16 (2017) 1-9.*

- 41) Peide Liu, **Tahir Mahmood** and Qaisar Khan, Multi-Attribute Decision-Making Based on Prioritized Aggregation Operator under Hesitant Intuitionistic Fuzzy Linguistic Environment, *Symmetry*, (ISSN:2073-8994), 9(11) (2017) 270. **I. F. 1.457.**
- 42) Saqib Hussain, Janusz Sokol, Umer Farooq, Maslina Darus and **Tahir Mahmood**, APPLICATIONS OF CONVOLUTION AND SUBORDINATION TO CERTAIN p -VALENT FUNCTIONS, *Bulletin of the Iranian Mathematical Society*, (ISSN: 1018-6301), 43 (6) (2017) 1739-1749. **I. F. 0.287.**
- 43) Murad Ullah, **Tahir Mahmood**, Muhammad Bilal Khan, Kifayat Ullah, On Twisted Soft Ideal of Soft Ordered Semigroups, *Journal of Information Communication Technologies and Robotic Applications*, (ISSN:2523-5729), 8(2) (2017) 74-85.
- 44) **Tahir Mahmood**, Kifayat Ullah, Murad Ullah Khan, Naeem Jan, Irfan Deli, Qaisar Khan, Some Aggregation Operators for Bipolar-Valued Hesitant Fuzzy Information based on Einstein Operational Laws, *Journal of Engineering and Applied Sciences*, (ISSN:2518-4571), 36(2)(2017) 63-72. **(HEC Recognized).**
- 45) **Tahir Mahmood**, Kifayat Ullah, Qaisar Khan and Florentin Smarandache, Some Aggregation Operators for Bipolar-Valued Hesitant Fuzzy Information, *Journal of Fundamental and Applied Sciences*, (ISSN:1112-9867), 10(4S) (2018) 240-245.
- 46) Muhammad Irfan Ali, **Tahir Mahmood** and Azmat Hussain, A study of generalized roughness in $(\epsilon, \epsilon \vee q_k)$ -fuzzy filters of ordered semigroups, *Journal of Taibah University for Science*, (ISSN:1658-3655), 12(2)(2018) 163-172. **I. F. 1.640.**
- 47) Peide Liu, **Tahir Mahmood** and Qaisar Khan, Group Decision Making Based on Power Heronian Aggregation Operators Under Linguistic Neutrosophic Environment, *International Journal of Fuzzy Systems*, (ISSN:1562-2479), 20(3) (2018) 970-985, **I. F. 3.085.**
- 48) **Tahir Mahmood**, Peide Liu, Jun Ye and Qaisar Khan, Several hybrid aggregation operators for triangular intuitionistic fuzzy set and their application in multi-criteria decision making, *Granular Computing*, (ISSN:2364-4974), 3 (2018) 153-168.
- 49) Kifayat Ullah, **Tahir Mahmood**, Naeem Jan, Similarity Measures for T-Spherical Fuzzy Sets with Applications in Pattern Recognition, *Symmetry*, (ISSN:2073-8994), 10 (2018) 193, **I. F. 2.143.**
- 50) **Tahir Mahmood**, Muhammad Irfan Ali, Azmat Hussain, Generalized roughness in fuzzy filters and fuzzy ideals with thresholds in ordered semigroups, *Computational and Applied Mathematics*, (ISSN:0101-8205), 37(2018) 5013-5033, **I. F. 1.260.**
- 51) Qaisar Khan, Peide Liu and **Tahir Mahmood**, Some Generalized Dice Measures for Double-Valued Neutrosophic Sets and Their Applications, *mathematics*, (ISSN 2227-7390) 6 (2018) 121. **I. F. 1.105.**
- 52) **Tahir Mahmood**, Muhammad Irfan Ali, Muhammad Aamir Malik, Waseem Ahmad, On Lattice Ordered Intuitionistic Fuzzy Soft Sets, *International Journal of*

Algebra and Statistics, (ISSN:2314-4548), 7 (2018) 46-61.

- 53) Qaisar Khan, Nasruddin Hassan and **Tahir Mahmood**, Neutrosophic Cubic Power Muirhead Mean Operators with Uncertain Data for Multi-Attribute Decision Making, *Symmetry*, (ISSN:2073-8994), 10 (2018) 444, **I. F. 2.143**.
- 54) Peide Liu, Qaisar Khan, Jun Ye and **Tahir Mahmood**, Group Decision-Making Method Under Hesitant Interval Neutrosophic Uncertain Linguistic Environment, *International Journal of Fuzzy Systems*, (ISSN:1562-2479), 20(7)(2018) 2337-2353 **I. F. 3.085**.
- 55) Qaisar Khan, Peide Liu, **Tahir Mahmood**, Florentin Smarandache and Kifayat Ullah, Some Interval Neutrosophic Dombi Power Bonferroni Mean Operators and Their Application in Multi Attribute Decision Making, *Symmetry*, (ISSN:2073-8994), 10(2018) 459, **I. F. 2.143**.
- 56) **Tahir Mahmood**, Zia Ur Rehman and Aslihan Sezgin, Lattice Ordered Soft Near Rings, *Korean Journal of Mathematics*, (ISSN:1976-8605), 26(3) (2018) 503-517.
- 57) Shahzaib Ashraf, **Tahir Mahmood**, Saleem Abdullah and Qaisar Khan, Picture Fuzzy Linguistic Sets and Their Applications for Multi-Attribute Group Decision Making Problems, *The Nucleus*, (ISSN:0029-5698), 55 (2) (2018) 66-73. **(HEC Recognised)**.
- 58) Kifayat Ullah, **Tahir Mahmood**, Naeem Jan, Said Broumi and Qaisar Khan, On Bipolar-Valued Hesitant Fuzzy Sets and Their Applications in Multi-Attribute Decision Making, *The Nucleus*, (ISSN:0029-5698), 55(2) (2018) 93-101. **(HEC Recognised)**.
- 59) Harish Garg , Muhammad Munir, Kifayat Ullah, **Tahir Mahmood**, Naeem Jan, Algorithm for T-Spherical Fuzzy Multi-Attribute Decision Making Based on Improved Interactive Aggregation Operators, *Symmetry*, (ISSN:2073-8994), 10(2018) 670 **I. F. 2.143**.
- 60) Muhammad Iftikhar and **Tahir Mahmood**, Some results on lattice ordered double framed soft semirings, *International Journal of Algebra and Statistics*, (ISSN:2314-4548), 7(2018)123-140.
- 61) Shahzaib Ashraf, Saleem Abdullah and **Tahir Mahmood**, GRA method based on spherical linguistic fuzzy Choquet integral environment and its application in multi-attribute decision making problems, *Mathematical Sciences*, (ISSN:2008-1359), 12 (2018) 263-275.
- 62) **Tahir Mahmood** and Naveed Ahmad Shah, Lattice Ordered Fuzzy Soft Groups, *Honam Mathematical Journal*, (ISSN:2288-6176), 40 (2018) 457-486.
- 63) Kifayat Ullah, **Tahir Mahmood**, Naeem Jan and Zeeshan Ali, A Note on Geometric Aggregation Operators in Spherical Fuzzy Environment and its Application in Multi-Attribute Decision Making, *Journal of Engineering and Applied Sciences*, (ISSN:1023-862X) 37(2) (2018) 75-86, **(HEC Recognized)**.
- 64) Kifayat Ullah, Zeeshan Ali, Naeem Jan, **Tahir Mahmood** and Shahid Maqsood, Multi-Attribute Decision Making Based on Averaging Aggregation Operators for Picture Hesitant Fuzzy Sets, *Technical Journal UET Taxila*, (ISSN: 1813-1786), 23 (4) (2018) 84-95, **(HEC Recognized)**.

- 65) Muhammad Bilal Khan, Vildan Cetkin, **Tahir Mahmood**, Naeem Jan, Kifayat Ullah and Halis Aygun, Near Rings in the View of double Framed Soft Fuzzy Sets, *Sigma Journal of Engineering and Natural Sciences*, (ISSN:1304-7191), 37(1) (2019) 175-186.
- 66) Naeem Jan, Lemnaoauar Zedam, **Tahir Mahmood**, Kifayat Ullah, Zeeshan Ali, Multiple Attribute Decision Making Method Under Linguistic Cubic Information, *Journal of Intelligent and Fuzzy Systems*, (ISSN:1064-1246), 36 (2019) 253-269. **I. F. 1.851.**
- 67) Peide Liu, Qaisar Khan and **Tahir Mahmood**, Application of Interval Neutrosophic Power Hamy Mean Operators in MAGDM, *INFORMATICA*, (ISSN:1822-8844), 30(2) (2019) 293-325, **I. F. 3.312.**
- 68) Shouzhen Zeng, Azmat Hussain, **Tahir Mahmood**, Muhammad Irfan Ali, Shahzaib Ashraf and Muhammad Munir, Covering based spherical fuzzy rough set model hybrid with TOPSIS for multi-attribute decision making, *Symmetry*, (ISSN:2073-8994), 11(2019) 547, **I. F. 2.645.**
- 69) Bijan Davvaz, Naeem Jan, **Tahir Mahmood** and Kifayat Ullah, Intuitionistic Fuzzy Graphs of n th Type with Applications, *Journal of Intelligent and Fuzzy Systems*, (ISSN:1064-1246), 36(4)(2019) 3923-3932, **I. F. 1.851.**
- 70) Naeem Jan, Zeeshan Ali, **Tahir Mahmood** and Kifayat Ullah, Some Generalized Distance and Similarity Measures for Picture Hesitant Fuzzy Sets and Their Applications in Building Material Recognition and Multi-Attribute Decision Making, *Punjab University Journal of Mathematics*, (ISSN:1016-2526), 51(7) (2019) 51-70. **(HEC Recognised).**
- 71) Naeem Jan, Kifayat Ullah, **Tahir Mahmood**, Harish Garg, Bijan Davvaz, Arsham Borumand Saeid and Said Broumi, Some Root Level Modifications in Interval Valued Fuzzy Graphs and Their Generalizations Including Neutrosophic Graphs, *mathematics*, (ISSN:2227-7390), 7(2019)72. **I. F. 1.747.**
- 72) Muhammad Naeem, Saqib Hussain, **Tahir Mahmood**, Shahid Khan and Maslina Darus, A New Subclass of Analytic Functions Defined by Using Salagean q -Differential Operator, *mathematics*, (ISSN:2227-7390), 7 (2019) 458. **I. F. 1.747.**
- 73) Shahzaib Ashraf, **Tahir Mahmood**, Saleem Abdullah and Qaisar Khan, Different Approaches to Multi-Criteria Group Decision Making Problems for Picture Fuzzy Environment, *Bulletin of The Brazilian Mathematical Society*, (ISSN:1678-7544), 50 (2019) 373-397, **I. F. 0.602.**
- 74) Azmat Hussain, Muhammad Irfan Ali and **Tahir Mahmood**, Generalized Roughness of $(\epsilon, \epsilon \vee q)$ -Fuzzy Ideals in Ordered Semigroups, *Journal of New Theory*, (ISSN:2149-1402), 26 (2019) 32-53.
- 75) Shahzaib Ashraf, Saleem Abdullah, **Tahir Mahmood**, Fazal Ghani and Tariq Mahmood, Spherical Fuzzy Sets and Their Applications in Multi-Attribute Decision Making Problems, *Journal of Intelligent and Fuzzy Systems*, (ISSN:1064-1246), 36 (2019) 2829–2844, **I. F. 1.851.**
- 76) Muhammad Rafiq, Shahzaib Ashraf, Saleem Abdullah, **Tahir Mahmood** and Shakoor Muhammad, The Cosine Similarity Measures of Spherical Fuzzy Sets and Their Applications in Decision Making, *Journal of Intelligent and Fuzzy*

systems, (ISSN:1064-1246), 36(2019) 6059–6073, **I. F. 1.851.**

- 77) Azmat Hussain, Muhammad Irfan Ali and **Tahir Mahmood**, Covering based q -rung orthopair fuzzy rough set model hybrid with TOPSIS for multi-attribute decision making, *Journal of Intelligent and Fuzzy systems*, (ISSN:1064-1246), 37 (2019) 981-993, **I. F. 1.851.**
- 78) Naeem Jan, Muhammad Aslam, Kifayat Ullah, **Tahir Mahmood** and Jun Wang, An Approach Towards Decision Making and Shortest Path Problems Using the Concepts of Interval-Valued Pythagorean Fuzzy Information, *International Journal of Intelligent Systems*, (ISSN:1098-111X), 34 (2019) 2403-2428, **I. F. 10.312.**
- 79) Shio Gai Quek, Ganeshsree Selvachandran, Muhammad Munir, **Tahir Mahmood**, Kifayat Ullah, Le Hoang Son, Pham Huy Thong, Raghvendra Kumar and Ishaani Priyadarshini, Multi-Attribute Multi-Perception Decision-Making Based on Generalized T-Spherical Fuzzy Weighted Aggregation Operators on Neutrosophic Sets, *mathematics*, (ISSN:2227-7390), 7 (2019) 780, **I. F. 1.747.**
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- 134) **Tahir Mahmood**, Ubaid Ur Rehman, Zeeshan Ali and Ronnason Chinram, Jaccard and Dice Similarity Measures based on Novel Complex Dual Hesitant Fuzzy Sets and Their Applications, *Mathematical Problems in Engineering*, (ISSN; 1024-123X), 2020(2020) Article ID:5920432 (25Pages), **I. F. 1.009**.
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- 1) Naeem Jan, Lemnaouar Zedam, **Tahir Mahmood**, Kifayat Ullah, Bijan Davvaz and Zeeshan Ali, An Improved Clustering Algorithm for Picture Fuzzy Graphs and its Applications in Human Decision Making, *International Journal of Fuzzy Systems*, (ISSN:1562-2479), **I. F. 4.406**.
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- 3) Peide Liu, Zeeshan Ali and **Tahir Mahmood**, The Consistency between Distance Measures and Cross-Entropy Based on Complex Fuzzy Sets and Their Application in Decision Making, *Journal of Intelligent and Fuzzy systems*, (ISSN:1064-1246), , **I. F. 1.851**.
- 4) **Tahir Mahmood**, Ubaid Ur Rehman and Zeeshan Ali, Exponential and non-Exponential Based Generalized Similarity Measures for Complex Hesitant Fuzzy Sets with Applications, *Fuzzy Information and Engineering*, (ISSN:1616-8658), **(Category X, HJRS)**.
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- 7) Peide Liu, Zeeshan Ali and **Tahir Mahmood**, Complex q -Rung Orthopair Fuzzy Variation Co-efficient Similarity Measures and their Approach in Medical Diagnosis and Pattern Recognition, *Scientia Iranica*, (ISSN: 2345-3605), **I. F. 1.017**.
- 8) Azmat Hussain, Muhammad Irfan Ali, **Tahir Mahmood** and Muhammad Munir, Group-based Generalized q -Rung Orthopair Average Aggregation Operators and Their Applications in Multi-criteria Decision Making, *Complex and Intelligent Systems*, (ISSN:2199-4536) , **I. F. 3.791**.
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- 21) **Tahir Mahmood**, Zeeshan Ahmad, Zeeshan Ali and Kifayat Ullah, TOPSIS Method and Similarity Measures Based on Cosine Function using Picture Hesitant Fuzzy Sets and Its Applications to Strategic Decision Making, *Fuzzy Information and Engineering*, (ISSN:1616-8658)
- 22) Ronnason Chinram, Azmat Hussian, Tahir Mahmood and Muhammad Irfan Ali, EDAs method for multi-criteria group decision making based on intuitionistic fuzzy rough aggregation operators, *IEEE ACCESS*, (ISSN:2169-3536), (2020), **I. F. 3.745**.

- 23) Harish Garg, Zeeshan Ali and **Tahir Mahmood**, Interval-valued Picture uncertain linguistic generalized Hamacher aggregation operators and their application in multiple attribute decision-making process, *Arabian Journal for Science and Engineering*, (ISSN: 2191-4281), **I. F. 1.711**.
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Refereeing and Reviewing

- 1) *IEEE Transactions on Fuzzy Systems*
- 2) *Information Sciences*
- 3) *Computers and Mathematics with Applications*
- 4) *Neural Computing and Applications*
- 5) *International Journal of Intelligent Systems*
- 6) *Computational and Applied Mathematics*
- 7) *Journal of Intelligent and Fuzzy Systems*
- 8) *Journal of Intelligent System*
- 9) *IEEE ACCESS*
- 10) *Journal of Mathematics (Hindawi)*
- 11) *Journal of Applied Mathematics and Computing*
- 12) *Complexity (Hindawi)*
- 13) *Mathematical Problems in Engineering*
- 14) *AIMS Mathematics*
- 15) *World Applied Sciences Journal*
- 16) *International Journal of Algebra and Statistics*
- 17) *The Nucleus*
- 18) *African Journal of Mathematics and Computer Science Research*
- 19) *Cogent Mathematics*
- 20) *Springer Plus*
- 21) *TWMS Journal of Applied and Engineering Mathematics*
- 22) *Asian Journal of Mathematics and Computer Research*
- 23) *Journal of Statistics and Mathematical Sciences*
- 24) *International Journal of System Sciences*
- 25) *Complex & Intelligent Systems*
- 26) *Annals of Fuzzy Mathematics and Informatics*
- 27) *Songklanakarin Journal of Science and Technology*
- 28) *Technical Journal, UET Taxila.*
- 29) *CAAI Transactions on Intelligence Technology*

Thesis Supervision of Ph. D. Students:

Sr.	Name of Student	Title of Thesis	Status
1	Qaisar Khan	Generalizations of Neutrosophic Sets with Applications in Decision Making	Completed in March 2019
2	Kifayat Ullah	Generalizations of Intuitionistic Fuzzy Sets And their Comparative Study	Completed in July 2020
3	Naeem Jan	Generalizations of Intuitionistic Fuzzy Sets And Their Applications in Graph Theory	Completed in July 2020
4	Muhammad Munir	Some Generalizations of Picture Fuzzy Sets and Their Applications	Completed in December 2020
5	Azmat Hussain	Some Contributions to Orthopair Fuzzy Set	Completed in

		And Their Applications	December 2020
6	Muhammad Naeem	Analysis and applications of Convolution And Subordination in Geometric Function Theory	Thesis submitted for final local defense after successful foreign review
7	Zeeshan Ali	Title not yet finalized	In progress
8	Ubaid ur Rehman	Title not yet finalized	In progress
9	Jabbar Ahmmad	Title not yet finalized	In progress
10	Abdul Jaleel	Title not yet finalized	In progress

Thesis Supervision of MS Students:

Sr.	Name of Student	Title of Thesis	Year
1	Qaisar Khan	Cubic Finite Automata and Cubic Language	2014
2	Muhammad Muti Ur Rehman	Study of Soft Sets with Ordered Set of Parameters	2014
3	Asim Ejaz	Bi-Polar Valued Fuzzy k-Ideals of Hemirings	2014
4	Muhammad Fahim Aslam	Study of fuzzy soft sets with some order on parameters	2014
5	Khizar Hayat	Bipolar valued fuzzy h-ideals in hemirings	2015
6	Muhammad Naeem	Interval valued fuzzy ideals in ternary semirings	2015
7	Usman Tariq	Ideal Theory in Semiring Based on Soft Sets	2015
8	Muhammad Bilal	Decision Making Based on Bipolar Valued Fuzzy Sets	2015
9	M. Saeed ur Rashid	Decision Making Based on Cubic Sets	2015
10	Muhammad Munir	On Bipolar Valued Fuzzy Ideals in Ternary Semirings	2015
11	Ayesha Anum	Soft Intersectional Ideals in Ternary Semirings	2015
12	Azhar Rauf Khan	A Study of Soft Matrices	2016
13	Mohsin Ali Khan	Some Extensions of Q-Fuzzy Soft Sets	2016
14	Asim Zamir	Characterizations of Ternary Semirings by their Soft Intersectional Ideals	2016
15	Kifayat Ullah	Decision Making Based on Bipolar Valued Hesitant Fuzzy Sets	2016
16	Naeem Jan	On Lattice Ordered Soft Groups	2016
17	Muhammad Mubashar Rafique Abbasi	Some Contribution in Lattice Ordered Soft Semigroups	2016
18	Faisal Mehmood	Decision Making Based on Cubic Hesitant Fuzzy Sets	2016
19	Shahzaib Ashraf	Some Contribution in Generalization of Fuzzy Sets	2017
20	Naveed Ahmed Shah	Some Contribution in Lattice Ordered Fuzzy Soft Sets	2017
21	Zia Ur Rehman	On Lattice Ordered Soft Near Rings	2017
22	Muhammad Aamir Malik	On Lattice Ordered Intuitionistic Fuzzy Soft Sets	2017
23	Zulekha Parveen	Normal and Non-Normal Pairs of Coxeter Groups	2017
24	Abdul Jaleel	Roughness of Soft Ideals of Rings	2018
25	Arsalan Ahmed	Roughness of Soft Ideals of Ordered Semigroups	2018
26	Muhammad Bilal Khan	Some Contributions in Soft Semigroups	2018
27	Mohsin Khan	Some Results in Lattice Ordered Fuzzy Soft Near Rings	2018
28	Chaudhry Sami Ullah Kha	On Lattice Ordered Soft Vector Spaces	2018
29	Umar Ashfaq	A Study of Rough Soft Groups	2018
30	Muhammad Nadeem Qure	A Study of Lattice Ordered Soft Modules	2018

31	Ajllal Ahmad	A Study of Neutrosophic Soft Semigroups with Ordered Set of Parameters	2018
32	Zeeshan Ali	A Study of Picture Fuzzy Sets	2018
33	Muhammad Iftikhar	A Study of Double Framed Soft Semirings	2018
34	Muhammad Umer	On Lattice Ordered Soft Expert Sets	2019
35	Haider Faizan	Application of Intuitionistic Fuzzy Values in Multi-Criteria Decision Making	2019
36	Imran Mahmood	A Study of Intuitionistic Fuzzy Sets in Decision Making Problems	2019
37	Jasim Tariq	A Study of Double Framed Soft Rings with Ordered Set of Parameters	2019
38	Muhammad Saad	A Study of Single Valued Neutrosophic Hesitant Fuzzy Graphs	2019
39	Shahzaib Shahbaz	Roughness of (α', β') -Fuzzy Filters in Ordered Semigroups	2019
40	Iftikhar Ahmad	A Study of Picture Fuzzy Sets and their Applications	2019
41	Zeeshan Ahmad	Similarity Measures of Picture Hesitant Fuzzy Sets	2019
42	Muhammad Ilyas	Analysis and Applications of Similarity Measures for Spherical Fuzzy Sets	2020
43	Jabbar Ahmmad	Some Aggregation Operators for Intuitionistic Fuzzy and Their Generalizations	2020
44	Wajid Ali	Aggregation Operators and Similarity Measures for Intuitionistic Hesitant Fuzzy Sets	2020
45	Muhammad Ahsen	Some Contributions in Picture Hesitant Fuzzy Sets	2020
46	Ubaid ur Rehman	A Study of Complex Hesitant Fuzzy Sets	2020
47	Mudassir Ali Khan	A Study of Aggregation Operators for Spherical Fuzzy Sets	In Prog.
48	Muhammad Waqas	Some Contribution in Picture Fuzzy Sets and Their Generalizations	In Prog.
49	Muhammad Saad Warraich	Title not yet finalized	In Prog.
50	Muhammad Rizwan Azmi	Title not yet finalized	In Prog.
51	Izatmand	Title not yet finalized	In Prog.

Project Supervision of BS Students:

Sr.	Name of Student	Title of Project	Year
1	Muhammad Munir	On Bipolar Fuzzy Subgroups	2013
2	Abdus Subhan	On Soft Topological Spaces	2013

Seminars Delivered:

- 1) Department of Mathematics, Quaid-i-Azam University Islamabad Seminar Series, January 12, 2010.
- 2) Department of Mathematics, Quaid-i-Azam University Islamabad Seminar Series, April 14, 2010.

CONFERENCES ATTENDED

- 1) 5th International Pure Mathematics Conference 2004

- 2) 6th International Pure Mathematics Conference 2005
- 3) 8th International Pure Mathematics Conference 2007
- 4) 9th International Pure Mathematics Conference 2008
- 5) 10th International Pure Mathematics Conference 2009
- 6) 11th International Pure Mathematics Conference 2010
- 7) 12th International Pure Mathematics Conference 2011
- 8) All Pakistan Mathematical Conference 2011
- 9) Recent Trends in Mathematical Sciences-II, 2019

CONFERENCES ORGANIZED

- 1) Two Days Conference on Mathematical Sciences (IIUI) 2013
- 2) Two Days Conference on Mathematical Sciences (IIUI) 2017

Teaching and Research Experience

Research Experience (Before Ph.D.)

M.Phil Mathematics (01-02-2003 TO 30-03-2005)

TWO Years

Teaching Experience

Permanent			
Lecturer (Mathematics)	Pakistan Advanced College of Excellence(PACE), Rawalpindi Cantt.	Aug 03, 1998 - Sep 25, 2000	Taught Maths of F.Sc. and of BS(Calculus, Discrete Mathematics, Numerical Analysis)
Lecturer (Mathematics)	Federal Directorate of Education, Islamabad	Sep 26, 2000 – Oct 01, 2005	Mathematics
Lecturer (Mathematics)	International Islamic University, Islamabad	Oct 03, 2005 – Jun 25, 2007	Teaching Maths of BS and M.Sc. (Calculus, Real Analysis, Group Theory, Linear Algebra, Topology, Numerical Analysis)
Assistant Professor (Mathematics)	International Islamic University, Islamabad	Jun 26, 2007 – todate	Teaching Maths of BS and M.Sc. (Calculus, Real Analysis, Group Theory, Linear Algebra, Topology, Numerical Analysis, Rings and Fields) and MS, Ph.D. (Fuzzy Algebra, Theory of Semirings, Near Rings, Topics in Algebra)
Visiting			
Lecturer (Mathematics)	Pakistan Advanced College of Excellence (PACE), Rawalpindi Cantt.	Sep 2000 – Sep 2002	Taught Maths of BS Calculus, Discrete Mathematics, Numerical Analysis)
Instructor (Mathematics)	Fatima Jinnah Women University	One Semester	Taught Discrete Mathematics to BS
Lecturer (Mathematics)	Allama Iqbal Open University	Two Semesters	Taught Mechanics to M.Sc.
Total Teaching Experience:		22+ Years (Continued)	
Post Graduate & University Teaching Exp.:		20+ Years (Continued)	

REFERENCES

Dr. Muhammad Shabir Professor, Department of Mathematics, Quaid-i-Azam University, Islamabad, Pakistan	Dr. Nasruddin Hassan Professor, School of Mathematical Sciences, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, UKM Bangi, Selongar DE 43600, Malaysia
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